Evaluation of the One-Stop Electronic Pilots

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Prepared for:

Employment Development Department
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Submitted by:

Science Applications International Corporation

9455 Towne Center Dr.
San Diego, CA 92121

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EXECUTIVE SUMMARY

The California One-Stop Office funded several technology pilots from 1996 to 1999. The funding for these pilots was awarded to local partnerships through a competitive process. Recipients of the grant needed to show potential for the development of innovative technology solutions that could be implemented on a wider scale. These technology pilots are often used to demonstrate the capability and capacity of California's One-Stop electronic infrastructure.

In association with the One-Stop Taskforce and California Employment Development Department (EDD), Science Applications International Corporation (SAIC) has conducted an evaluation of selected One-Stop technology pilot projects.

The pilot projects were rated according to business requirements, usability, technology and overall. The Overall Rating for each project is an average of Business Requirements, Usability, and Technology Ratings. Recommendations for each project component indicated whether the pilot was ready for replication in other state or local One-Stop locations. In some cases the project had not completed implementation or development and was recommended for review when it became operational. Lessons learned, best practices, observations and comments were recorded for each pilot project. Some of the major lessons learned centered on project funding and buy-in of partners. Many project leaders felt that having partners buy in and support a common vision was key to their success. Without partner buy-in and agreement concerning the vision, projects can be delayed due to indecision. As a best practice, it is recommended to develop a plan and find the financial resources to support the vision rather than plan technology around a budget. Financial resources to fund the plan could be allocated in phases if necessary. (See Summary Report, section 1 Pilot Project Conclusions).

Critical success factors were identified and used to determine whether the pilots were successful in accomplishing management's objectives. For example, questions such as "did the partners get connected?"; "is it robust enough to allow for expansion?", etc. were used to measure critical success factors. Usability or "user-friendliness" was measured to determine the project's alignment with One-Stop philosophy. The technologies utilized in the projects were evaluated to determine the portability and replication potential to other local or state One-Stop centers. This analysis looked at the qualities of maintainability, scalability, cost to implement, complexity, architecture, performance, development and capability in each project to determine its viability for replication.

To consider the possibility of implementing a combination of the pilot projects, the recommendations were separated into local and statewide implementations. For local implementation, the following requirements were evaluated:

- ♦ Client accessibility to information and services
- ♦ Staff accessibility to information and services
- ♦ Employer accessibility to information and services
- ♦ Connectivity and infrastructure improvement
- ♦ Data sharing and better communications

♦ Information and services in multiple languages
♦ Common intake/case management systems to share caseloads
♦ Services and training directory

Any technology projects that are implemented at a statewide level need to be simple, generic and standardized. An example of this would be access to information such as training and services through the Internet to minimize system incompatibility.

Since each local One-Stop area is unique, rather than providing a technical solution to be used by local One-Stops, the State's role is to provide requirements, guidelines and data protocol such as the following:

♦ Principles for One-Stop Information Training (POSIT) Report
♦ One-Stop Vision
♦ Data Confidentially Report by EDS
♦ Data Security Report by SAIC
♦ Common Intake Report
♦ Common Intake Appendix
♦ Case Management Workgroup Charter
♦ Special Needs Report
♦ One-Stop Technology Pilot Project Evaluations by SAIC

For the pilot projects evaluated in this study, guidelines and requirements in the following areas were unresolved:

1. Ability for mandatory partners to share data between legacy systems.
2. Guidelines or methodology for developing and implementing technology projects.
3. Strong direction or oversight to follow the guidelines and requirements .

Most local solutions meet a general set of requirements. However, they are customized to meet the local needs of the service delivery areas. Having a certain amount of local control to provide the services that best meet the needs of the people they serve was a significant change in the Workforce Investment Act, and the State should continue to take this approach in developing the electronic information architecture.

The solutions developed by the pilot projects should not be replicated statewide, but used as examples for possible solutions to be implemented in other locations. Though the solutions that were developed are viable, in some cases the process and methodology used are more important. Sound methodology and guidelines should ensure that appropriate architectural platforms be identified in order to select the proper operating system, software and hardware. This is especially true in the infrastructure building, connectivity and kiosk area. Since technology turns over so fast, it is important to identify the methodology that would provide the best opportunity to procure solutions that are robust and flexible. In this approach local areas have the discretion to formulate solutions that best meet their needs. In addition, the methodology used by the projects for infrastructure capacity building and connectivity among partners and One-Stops should be documented and made available to other locations.

It is hoped that the best practices and lessons learned identified in this report will provide the foundation for a methodology that leads to improvements or shared successes that could be repeated.

As an example of effective methodology, the East Bay Works plan was simple. Their approach was to conduct analysis first and verify that their solutions would be feasible. Implementation of the proposed solutions then followed using pooled technical resources from different agencies.

This enabled them to leverage resources to develop technology using partner funds. This practice of pooling resources to build the infrastructure, instead of piecing small solutions together using individual resources is where EBW was most effective. Details of this pilot project can be found in Appendix C 1 of the report.

Executive Overview

In association with the One-Stop Taskforce and California Employment Development Department (EDD), Science Applications International Corporation (SAIC) has conducted an evaluation of selected One-Stop technology pilot projects undertaken in the 1996-1999 time period. Methodology included on-site interviews, surveys, demonstrations and applications of tools to determine usability. Each pilot was evaluated on whether it met the following criteria:

♦ One-Stop Business Requirements
♦ Project defined business needs
♦ Critical Success Factors
♦ Level of usability
♦ Feasibility of technology replication

A summary report is included, documenting the activities performed, conclusions, and recommendations for future activities for each of the pilots.

Pilot projects selected for this evaluation include the following list with the intended objective for each:

1997 Pilots
♦ **NOVA Connect!** – An Information and Referral Touch-Screen Multilingual Kiosk System.
♦ **NOVA Learnet** – Learning Network Consortium to develop an Education and Training Services Directory, leverage website development for training partners and provide training informational resources for use within the consortium.

1998 Pilots
♦ **LA Virtual Net/Case Management** – a linkage to all regional, self-identified One-Stop Centers, the JTPA & EDD partners, non-co-located EDD sites, CalWORKS and partners' primary locations for information sharing.
♦ **Eastbay Works** – a cross-agency system linkage for transferring customer and financial data, providing bridges to key partner sites, expanding website links and content and providing a technical support help desk to support the technology.
♦ **San Francisco One-Stop (language)** – a web-based application with multilingual capability for client usage.

Special Needs Kiosks
♦ **Long Beach WIN** – services for those clients unable to visit a One-Stop, including those with visual impairments, low vision or low literacy levels.
♦ **Riverside EDA** – a Job Information and Referral Interactive Bilingual Kiosk System.

This report includes a summary of the overall recommendations for implementation on a statewide or local level in the Executive Summary. The next steps to consider, lessons learned, best practices, observations and comments are provided in the Summary Report. One-Stop Business requirements are included in Appendix A. A copy of the Pilot Evaluation Survey form is included in Appendix B. An analysis of each pilot project is provided in Appendix C, for a detailed view of each project.

Summary of Pilots

Each pilot project consisted of more than one component. Various components of the pilot projects were evaluated. Project components that were determined ready for replication were recommended. Any project component that was not complete was recommended for further review when that component is complete. All pilot projects need to document their methodologies, processes and procedures, so that this technology could be replicated.

Report Summary

The Report Summary table summarizes the ratings this study determined for each pilot project. The rating scale is from one to ten. One is the lowest and ten is the highest. The project ratings consist of Business Requirements, Usability, Technology and Overall ratings.

Business Requirements is defined as those items that are necessary or essential in a project deliverable to meet the stated business goals. When information systems are included as part of a project, the information systems requirements would be derived from the business requirements to further support the overall goals and missions. These project One Stop Business Requirements were derived and each project was rated on those requirements. The degree to which each technology pilot project meets defined business requirements was analyzed and rated. The rating is based on a count of business requirements that each pilot project fulfills. For more information on the Business Requirement rating see *Appendix A: One-Stop Business Requirements.*

Usability - The magnitude and diversity of the population to be served by One-Stops makes usability, or "user-friendliness," a critical issue. The rating scale represents the reviewer's assessment of the extent to which the service/product successfully addresses (a) the capabilities of the target population of users within (b) the constraints imposed by the software and hardware employed to deliver that service or product.

A rating near ten indicates that, in the reviewer's opinion, there is relatively little room for improvement in usability, given the constraints of the hardware and software. A rating one indicates that significant improvements in design are possible within these constraints. For more information on the Usability Rating see page 19.

Technology presents an evaluation of the hardware, software and architecture used to develop the pilot solutions. The importance of technology portability and replication to other local or state One-Stop centers is also vital to the success of the pilot funding. The technology of each project is analyzed to determine the feasibility for replication and portability by other One-Stops. Each project was rated on eight key characteristics, which were summed and averaged to a summary rating from one to ten. Projects receiving an overall rating closer to ten meant the technology could be easily replicated and ported to another state or local One-Stop location. For more information on the Replication of Technology see page 20.

The **Overall Rating** for each project is an average of Business Requirements, Usability, and Technology Ratings. The basis for each rating will be provided in the respective Summary

Report sections. The higher the rating a project received is proportionate to the level it met the characters and requirements for that particular category.

Recommendation for each project component indicated whether the pilot was ready for replication in other state or local One-Stop locations. In some cases, the project had not completed implementation or development and was recommended for review when it became operational. For further detail regarding each pilot project's recommendation see Sections A-C on the pages following the chart below. The following table summarizes the ratings this study determined for each pilot project.

Agency	Project	Business Requirements Rating	Usability Rating	Technology Rating	Overall Rating	Recommendation
Eastbay Works	Partner capacity building linkages	8	N/A	6	**7**	Local
	Website	8	7	6	**7**	Review when operational
	Case management	8	7	6	**7**	Review when web-based version is operational
San Francisco One-Stop	Website SFOSI	8	9	7	**8**	Local & state
	Intranet SFOSA	8	9	7	**8**	Review when operational
	Partner capacity building linkages	8	N/A	7	**7**	Local
NOVA	Connect! Kiosk	8	4	8	**7**	Local
	Learnet	6	4	6	**5**	Local
Long Beach	WIN Kiosk	9	8	7	**8**	Local
Riverside EDA	Kiosk	8	7	7	**7**	Local
Virtual LA	Partner capacity building linkages	7	N/A	6	**7**	Local
	Social Service Direct	7	N/O	6	N/O	Review when operational
	DSI Case Management	7	N/O	6	N/O	Review when operational

N/A = not applicable   N/O = Not Operational
 Rating: 1 lowest and 10 highest.

In this section of the report summary, conclusions about the readiness of each pilot to be implemented in other service areas are presented. For ease of reference, each pilot's goals are summarized again in Appendix C Pilot Details.

A. Conclusions for all pilots and readiness for any combination or all of the pilots to be implemented in another location or statewide.

Eastbay Works – a cross-agency system linkage for transferring customer and financial data, providing bridges to key partner sites, expanding website links and content and providing a technical support help desk to support the technology. Personal computers, software and networking equipment were purchased to facilitate partner connectivity.

Recommendations -
- The website expansion is still in progress and should be reviewed when complete.
- The case management software should be reviewed when the web-based version is available. This common intake/case management system (CICM) was a component in this pilot project. This system was evaluated on whether it meets the criteria defined by the pilot project. Recommendations were based on evaluation of the project critical success factors, usability, and technology replication.
- The bar code component, which was integrated into the case management software, is recommended for local implementation.

San Francisco One-Stop (language) – a web-based application with multilingual capability for client usage. The multilingual component has been moved into Phase II, which is still under review. Phase II is the San Francisco One-Stop Analyzer (SFOSA) which is an ad hoc query tool within SFOS so that San Francisco One-Stop (SFOS) staff and its partners could use these transactions to generate metrics and analysis about its customers. An RFP was issued for SFOSA that resulted in a failed bid due to lack of bids. This component is under review. San Francisco PIC purchased hardware and software for the CBO partner agencies to get connected to the SFOSI Internet and Intranet.

Recommendations -
- The San Francisco One-Stop Interactive (SFOSI) is fully functional and recommended for local implementation.
- When Phase II is implemented, the website should be reviewed for replication possibilities.

NOVA Connect! – An Information and Referral Touch screen Multilingual Kiosk System. The prototype kiosk equipment and software was installed in the EDD office. Based on the feedback from the prototype, many changes have been incorporated in the design as well as the functionality.

Recommendations -
♦ This kiosk has been recommended for local replication provided that recommended next steps are implemented including: usability modifications, bug fixes and kiosk retest. See page 5, A List of Recommend Next Steps.

NOVA Learnet – develop a Learning Network Consortium Education and Training Services Directory, leverage website development for training partners and provide training informational resources for use within the consortium. It is fully functional and has the capacity to record data for the different programs and providers. However, the providers have not yet loaded the course information and performance information has been delayed until the State Workforce Investment Board provides direction on the implementation of SB645. The only hindrance is possible continuity issues as it is written in Fourth Dimension database language on a MacIntosh Network.

Recommendations -
♦ The Learnet directory is recommended for local replication.
♦ Consider porting the solution from Macintosh networking and relational database to Windows NT or UNIX. The vendor could address this issue, since most multiple platform vendors already have conversion routines in place.

Riverside Economy Development Agency (EDA) – a Job Information and Referral Interactive Bilingual Kiosk. Thirty-six of the forty kiosks have been installed through Riverside County.

Recommendations –
♦ The kiosk is recommended for local replication.

Long Beach WIN – a service for those clients unable to visit a One-Stop, including those with visual impairments or low literacy levels. There are ten kiosks installed and three additional units would be installed in the near future. In addition, equipment has been installed providing accessibility for people with special needs.

Recommendations -
♦ We recommend this project for local replication.

LA Virtual Net/Case Management – a linkage to regional, self-identified One-Stop Centers, JTPA & EDD partners, non-co-located EDD sites, CalWORKS and partners' primary locations for information sharing. The regional linkage component is complete through the implementation of a Frame Relay Network (FRN). The social directory and the case management system were not complete at the time of our evaluation.

Recommendations –

♦ The methodology used to design and implement the Regional Frame Relay Network portion of the project is recommended for local implementation.

♦ We recommend reviewing the social service directory and the case management system for further consideration once they are complete. This common intake/case management system (CICM) was a component in this pilot project. This system was evaluated on whether it met the criteria defined by the pilot project. Recommendations for replication were based on evaluation of the project's critical success factors, usability, and technology replications.

B. Conclusions for all pilots and readiness for any combination or all of the pilots to be implemented in another location or statewide.

To consider the possibility of implementing a combination of the pilot projects, the recommendations were separated into local and statewide implementations. Each of these two options is discussed below.

Local Implementation

The recommendations for implementation of other pilot projects is divided into the categories from the *Local Requirements* analyzed on page ix. These recommendations by category are listed in alphabetical order

♦ Client accessibility to information and services
  a) Long Beach WIN Kiosk
  b) NOVA Connect! Kiosk
  c) Riverside EDA Kiosk
  d) San Francisco One-Stop Interactive Website

♦ Staff accessibility to information and services
  a) Eastbay Works bar code tracking system
  b) San Francisco One-Stop Interactive website

♦ Employer accessibility to information and services
  a) Eastbay Works Website, when complete
  b) San Francisco One-Stop Interactive website

♦ Connectivity and infrastructure improvement
  a) Eastbay Works capacity solution for partner connectivity methodology
  b) San Francisco capacity building solution for partner connectivity methodology
  c) Virtual Los Angeles FRN and overall connectivity infrastructure plan methodology
♦

♦ Data sharing and better communications
  a) Eastbay Works capacity solution for partner connectivity methodology
  b) San Francisco capacity building solution for partner connectivity methodology
  c) Virtual Los Angeles FRN and overall connectivity infrastructure plan methodology
♦

♦ Information and services in multiple languages
  a) Riverside EDA Kiosk
  b) San Francisco One-Stop Interactive website, if Phase II is completed

♦

♦

♦ Common intake/case management systems to share caseloads
  The common intake/case management systems (CICM) were components in certain pilot projects. These systems were evaluated on whether they met the criteria defined by their pilot project. Recommendations for replication were based on evaluation of the project's critical success factors, usability, and technology replications.
  a) Eastbay Works SMARTware case-tracking system, a web-based version with bar code system should be considered once complete.
  b) Virtual LA DSI ClientTrack case management system should be considered once complete.

♦ Services and training directory
  a) Virtual LA Social Service Directory should be considered once complete.
  b) NOVA Learnet Training Directory

Statewide Implementation

Any technology projects that are implemented at a statewide level need to be simple, generic and standardized. An example of this would be access to information such as training and services through the Internet to minimize system incompatibility.

Since each local One-Stop area is unique, rather than providing a technical solution to be used by local One-Stops, the States role is to provide requirements, guidelines and data protocol. Most local solutions meet a general set of requirements. However, they are customized to meet the local needs of the service delivery areas. Having a certain amount of local control to provide the services that best meet the needs of the people they serve was a significant change in the Workforce Investment Act, and the State should continue to take this approach in developing the electronic information architecture.

To date, the State has done a good job providing One-Stop Electronic Infrastructure guidelines, requirements and data protocols in the form of One-Stop Reports such as the following:

♦ Principles for One-Stop Information Training (POSIT) Report
♦ One-Stop Vision
♦ Data Confidentially Report by EDS
♦ Data Security Report by SAIC
♦ Common Intake Report
♦ Common Intake Appendix
♦ Case Management Workgroup Charter
♦ Special Needs Report
♦ EDD Technology Pilot Project Evaluations

However, guidelines and requirements in the following areas are unresolved:

♦ **Limited ability for mandatory partners to share data between legacy systems.**
The pilots that attempted to provide data sharing with EDD as a component for capacity building across partner systems were prohibited due to policy issues such as data confidentiality and security. EDD does not have any policies or procedures that address sharing data with other external organizations.

♦ **Lack of guidelines or methodology for developing and implementing technology projects.**
There are not any guidelines and methodologies for developing and implementing information technology projects successfully. Since most of the One-Stop areas are inexperienced at developing technology projects, providing guidelines and methodology is important. It would assist in minimizing time loss and money wasted through costly mistakes.

♦ **Strong direction or oversight to follow the guidelines and requirements highlighted above.**
In order to ensure that the One-Stop centers under local control develop the needed electronic infrastructure desired by the State, some form of strong direction or oversight should be exercised by the State.

The solutions developed by the pilot projects should not be replicated statewide, but used as examples for possible solutions to be implemented in other locations. Though the solutions that were developed are viable, in some cases the process and methodology used are more important. Sound methodology and guidelines should ensure that appropriate architectural platforms be identified in order to select the proper operating system, software and hardware. This is especially true in the infrastructure building, connectivity and kiosk area. Since technology turns over so fast, it is important to identify the methodology that would provide the best opportunity to procure solutions that are robust and flexible. In this approach local areas have the discretion to formulate solutions that best meet their needs. In addition, the methodology used by the projects for infrastructure capacity building and connectivity among partners and One-Stops should be documented and made available to other locations.

Local Requirements

Because of the somewhat general nature of the business requirements promulgated by the State of California, actual implementation plans and requirements are locally driven. Therefore, each One-Stop Pilot assessed their local technology and designed solutions to address their local needs while complying with One-Stop Career Center requirements. The following are the refined business needs the local One-Stops sought to satisfy:

♦ Client accessibility to information and services.
♦ Partner accessibility to information and services.
♦ Employer accessibility to information and services.
♦ Connectivity and infrastructure improvement.
♦ Data sharing and better communication.
♦ Information and services in multiple languages.
♦ Common intake/case management system to share caseloads and track clients.
♦ Services and training directory.

In particular, the matrix below shows the business needs each pilot project sought to address when they requested funds for the technology grant.

Business Needs	NOVA Kiosk	NOVA Learnet	LA Virtual	Eastbay Works	San Francisco	Long Beach	Riverside
Client accessibility to information and services.	✓	✓	✓	✓	✓	✓	✓
Staff accessibility to information and services.			✓	✓	✓		
Employer accessibility to information and services.	✓	✓	✓	✓	✓		
Connectivity and infrastructure improvement.			✓	✓	✓		
Data sharing and better communication.			✓	✓	✓		
Information and services in multiple languages.	✓				✓	✓	✓
Common intake/case management systems to share caseloads.			✓	✓	✓		
Services and training directory.		✓	✓				

Local Technical Solutions

Once a local One-Stop analyzes the State business requirements and further refines and combines those requirements with local requirements, a technical solution must be developed. For each business need, there are a variety of technology solutions available which are listed below:

♦ Intranet access
♦ Internet access
♦ Kiosk access
♦ Training Directory
♦ Social Services Directory
♦ Infrastructure connectivity network
♦ Infrastructure connectivity PC/Workstation
♦ Common Intake/Case Management System

These Pilot Projects began between 1996 and 1998. The solutions reflect the technology considered by Pilot Projects at the time they began. All possible solutions were not evaluated in this report. There was no methodology to determine the solutions considered. As a result of interviewing project staff, reviewing project grant applications and project surveys, SAIC summarized the local One-Stop business needs and solutions considered. To test the acceptability of solutions chosen by each project, SAIC developed a table of possible solutions considered by the Pilot Projects to meet the listed, locally defined business needs (see page ix Local Requirements). The table below provides the list of Business Needs the One Stop sought to satisfy with check marks in the columns of the Possible Solutions that would address that need.

Business Needs vs. Possible Solutions	Intranet access	Internet access	Kiosk	Training Directory	Social Services Directory	Infrastructure connectivity Network	Infrastructure connectivity PC/Workstation	Common Intake/ Case Management System
Client accessibility to information and services.		✓	✓	✓	✓	✓		
Staff accessibility to information and services.	✓	✓	✓	✓	✓	✓	✓	✓
Employer accessibility to information and services.		✓		✓	✓			
Connectivity and infrastructure improvement.						✓	✓	
Data sharing and better communication.	✓	✓				✓	✓	✓
Information and services in multiple languages.	✓	✓	✓	✓		✓		✓
Common intake/case management systems to share caseloads.						✓	✓	✓
Services and training directory.	✓	✓	✓	✓	✓			

Each project chose the solutions that most effectively met their local needs.

Solutions Chosen	NOVA Kiosk	NOVA Learnet	LA Virtual	Eastbay Works	San Francisco	Long Beach	Riverside
A) Intranet access			✓	✓	✓		
B) Internet access	✓	✓	✓	✓	✓	✓	✓
C) Kiosk access	✓					✓	✓
D) Training Directory		✓					
E) Social Services Directory			✓				
F) Infrastructure connectivity network			✓	✓			
G) Infrastructure connectivity PC/Workstation				✓	✓		
H) Common Intake/Case Management System			✓	✓			

These solutions were identified through external analysis, interviews and surveys. As could be derived from comparison of this table and the *Business Needs vs. Possible Solutions table*, each pilot chose acceptable technical solutions to meet their business needs. However, this table comparison could not present the optimal solution, as the optimal solution must include other factors in addition to requirements, such as existing infrastructure and budget. The gathering of these other factors was not in the scope of this project nor did the project timeline allow for the collection and analysis of this type of information.

Appendix C provides more detail on the specific solutions each project chose to meet their needs.

In addition to addressing specific business needs, there were various features that were also important to include with the different solutions. The chart below lists the various features by Solutions Chosen and pilot project. This chart may provide ideas for projects in the future.

Features	Solutions Chosen	NOVA Kiosk	NOVA Learnet	LA Virtual	Eastbay Works	San Francisco	Long Beach	Riverside
Touch Screens	C	✓					✓	✓
Multilingual	B,C	✓				✓		
Supports special access (ADA)	A,B, C	✓				✓	✓	
Directory Services	A, B, C,D,E	✓	✓	✓	✓	✓	✓	✓
Web-based	A,B,C,D,E	✓	✓	✓	✓	✓	✓	
Training information resources	A, B, C, D, E	✓	✓	✓	✓	✓	✓	✓
Web-based training/orientation	C	✓					✓	✓
Linkage to partners	A,B,C, D, E, F, G, H	✓	✓	✓	✓	✓	✓	✓
Transfers customer/financial data	H			✓	✓			
Technical support help desk	A,B,C,F, H	✓		✓	✓		✓	✓
Hardware Y2K compliant	A,B,C, D, E, F, G, H	✓	✓	✓	✓	✓	✓	✓
Software Y2K compliant	A,B,C, D, E, F, G, H	✓	✓	✓	✓	✓	✓	✓
Imports/exports data	A,B, C, D, E, H	✓	✓	✓	✓	✓	✓	✓
Easy user interface for clients	A,B, C, D, E,H	✓			✓	✓	✓	✓
Easy user interface for staff	A, B,C, H	✓			✓	✓	✓	✓
Tracks training and job search activities	H			✓	✓			
On-line help	A,B, C, D, E,H	✓	✓	✓	✓	✓	✓	✓
Facilitates data sharing	A, H			✓	✓	✓		
Supports multiple security levels	A, B, C,D, E,F,H	✓	✓	✓	✓	✓	✓	✓
Eliminates duplicate entry	A, B, , H			✓	✓	✓		

Note: ADA =Americans With Disabilities Act

EDD Technology Pilot Evaluation

Purpose of the Study

Over the past several months, SAIC has conducted an independent assessment of the One-Stop Office funded technology pilots. The purpose of this study was to provide project status, an evaluation and a list of recommendations for each pilot effort. In addition, this study evaluates the pilots for statewide and local application.

Overview of One-Stop Technology Pilots

The California One-Stop Office funded several technology pilots from 1996 to 1999. The funding for these pilots was awarded to local partnerships through a competitive process. Recipients of the grant needed to show potential for the development of innovative technology solutions that could be implemented on a wider scale. These technology pilots are often used to demonstrate the capability and capacity of California's One-Stop electronic infrastructure.

Pilots

The pilot projects and their respective technology goals are summarized in this section.

1997 Pilots
- NOVA Connect! – Develop an Information and Referral Touch screen Multilingual Kiosk System.
- NOVA Learnet – develop an Education and Training Services Directory; leverage website development for training partners; and provide training informational resources for use within the consortium.

1998 Pilots
- LA Virtual Net/Case Management – provide information sharing capability to all regional, self-identified One-Stop Centers; JTPA and EDD partners; non-co-located EDD sites; CalWORKS; and partners' primary locations.
- East Bay Works – provide a cross-agency system linkage for transferring customer and financial data; expanding website links and content; and providing a technical support help desk.
- San Francisco One-Stop – develops a Web-based application; build capacity for partners; and add multilingual capability to the website for client usage.

Special Needs Kiosks
- Long Beach Win – provide access to services for those clients unable to visit a One-Stop; and share client information between partners.
- Riverside EDA – develop a Job Information and Referral Interactive, Bilingual, Kiosk System.

Benefits of Evaluation

This report is intended to benefit the key stakeholders of the Electronic One-Stop Pilots through:

♦ An update of the pilots and lessons learned from each pilot and the participating local entities.
♦ Transfer of effective technology knowledge and One-Stop processes as created at the local level.
♦ Other One-Stop offices would benefit from the lessons learned from the pilot site.

Recommendations to continue efforts, replication of solutions, revisions before proceeding and any other next steps needed to enhance or build upon solutions created are included in the Summary/Recommendations report.

Study Methods and Structure

Study Methods

To accomplish the goals of this study, SAIC utilized several methods to gather required information and reach conclusions. Primarily, interviews and surveys (See Appendix B:Pilot Evaluation Survey) were conducted with each pilot's management and technology staff. These interviews and surveys focused on gathering the following information:

♦ Pilot's purpose.
♦ Business needs.
♦ Approach taken by the pilot project.
♦ Critical success factors.
♦ Lessons learned.
♦ Best practices.
♦ Observations and comments.
♦

In addition, further research was required to reach conclusions about the usability of the One-Stop pilots. SAIC utilized Dr. Brock S. Allen, co-editor of ***Principles for One-Stop Information & Training – Handbook of Usability Principles.*** Dr. Allen analyzed the usability of the pilot project websites and kiosks. In his analysis, he worked through each level or program segment and tested several functions at each level. Following his initial inspection, Dr. Allen videotaped users, directing each user to try out areas of particular concern. The user testing was done only for the Long Beach WIN and NOVA Connect! Kiosks. Also, his inspections were supplemented with tests of text readability using the Flesch-Kincaid formula and an analysis of compliance with minimum standards for visually impaired users. Dr. Allen's summarized comments are included in this report.

Finally, to determine the feasibility of technology replication for other local or state One-Stop programs, SAIC used internal technical experts, including programmers and systems engineers. SAIC technical staff analyzed and rated the technology of each pilot project using the following criteria: capability, maintainability, scalability, complexity and affordability.

Study Structure

This EDD Technology Pilot Evaluation report consists of:

• the **Summary Report,**
• the **One-Stop Business Requirements** in Appendix A,
• the **Pilot Evaluation Survey** form in Appendix B
• the **Pilot Project Details** in Appendix C**.**

The **Summary Report** provides a condensed version of pertinent information regarding:
1) Pilot project conclusions – which include:
    a. A list of recommended next steps (for both local and state levels) for combinations of pilots or, if deemed appropriate, all pilots.
    b. Summary of lessons learned, best practices, observations and comments.
2) Business requirements to meet One-Stop needs.
3) Critical success factors and usability to support the One-Stop philosophy.
4) Technologies utilized to determine replication at other local and state One-Stops.

The **Pilot Project Details,** which is in Appendix C, is a detailed evaluation and assessment of each of the pilot projects. This section should be used to understand conclusions presented in the Summary Report or to find further information on the individual pilots. This section is organized by pilot project and each pilot project discusses the following:
1) Detailed pilot description, including business needs fulfillment and approach.
2) The degree to which each pilot supported the One-Stop philosophy by rating a pilot's fulfillment of critical success factors and usability requirements.
3) The ability of the specific technology used in each pilot to be replicated in other One-Stops.
4) Evaluations and recommendations specific to each pilot.

Summary Report

1. Pilot Project Conclusions

a)   A list of recommended next steps (for both local and state levels) for each of the pilots.
Details for each project could be found in Appendix C: Pilot Project Details. In the following chart, each project's next steps are divided into Business Requirements, Usability Technology and Other.

Agency	Next Steps
Eastbay Works	*Business Requirements* ♦ Define the minimum specifications for the bar code equipment and bill of materials. *Usability* ♦ None. *Technology* ♦ None. *Other* ♦ Document the East Bay Works (EBW) process for reviewing, developing and implementing their technology solutions. ♦ Document the bar code process and develop a manual for set-up, business rules, operation and implementation of the bar-coding system. ♦ Review EBW's new website, when ready. ♦ Review the SMARTware2000 case management system, when ready for implementation.
San Francisco One-Stop	*Business Requirements* ♦ Conduct a needs analysis for the local areas in which this website is to be replicated. The analysis would consider the existing architecture, partner connectivity and serve as the blueprint for implementing the website. Identify software, hardware, equipment and necessary upgrades in order to facilitate connectivity at partner and One-Stop Centers. ♦ Incorporate local customization into the website in the development phase. *Usability* ♦ Fix the usability issues, i.e. consider lowering the reading level of the website and add alternative text labels for graphic labels. *Technology* ♦ Depending on the results of the needs analysis, a conversion plan may need to be developed to migrate to network platform (i.e. UNIX to NT) or relational databases (i.e. Access to Informix) or both ♦ Training for systems administrator and staff would need to be developed ♦ Train the systems administrator and staff to use the network system and web application. ♦ Evaluate whether the local SDA could provide the webmaster or hire a technical vendor to host and maintain the site. *Other* ♦ Document the San Francisco capacity building process for partner connectivity and incorporate the lessons learned and best practices.

Agency	Next Steps
NOVA Kiosk	*Requirements* ♦ Conduct a site-survey on locations to determine where the kiosk would be installed. ♦ A needs analysis would have to be conducted, taking into consideration network architecture, local customizations and staff training. *Usability* ♦ Ensure the new kiosk has incorporated the usability modifications and the technical fixes stated in the usability study. *Technology* ♦ The new kiosk should be retested after the fixes and modifications have been made. ♦ Depending on the results of the needs analysis, a conversion plan may need to be developed to migrate the network platform (i.e. UNIX to NT) or relational databases (i.e. Access to Informix) or both. *Other* ♦ A manual should be created that documents the kiosk development, procurement and implementation process. ♦ Make sure all agreements and memorandums of understanding are in place with the sites before the kiosks are installed.
NOVA Learnet	*Business Requirements* ♦ Conduct a needs analysis for the local areas in which the website is to be replicated. The analysis would consider the existing architecture, partner connectivity and serve as the blueprint for implementing the training directory. ♦ Local customization to the website would have to be incorporated into the development phase. *Usability* ♦ Review the usability issues and make the appropriate changes before further replication. *Technology* ♦ Develop a conversion plan to move the existing database and network architecture to one of the more common relational databases and network architecture, i.e. Windows NT/UNIX. ♦ Training for systems administrator and staff would need to be developed or acquired. ♦ A decision needs to be made whether to host and maintain the Learnet site internally or contract out for these services. *Other* ♦ Document the NOVA development process and include the lessons learned and best practices. ♦ Incorporate the user's manual and add the performance information, when it becomes available.

Agency	Next Steps
Long Beach	*Business Requirements* ♦ Conduct a needs analysis for the local areas in which this kiosk model is to be replicated. The analysis would consider the existing architecture, database and serve as the blueprint for developing and implementing the kiosk ♦ Local customization to the kiosk would have to be incorporated into the development phase. ♦ Conduct a site-survey on locations where the kiosk would be installed. *Usability* ♦ Review the usability issues and make the appropriate changes. *Technology* ♦ Depending on the results of the needs analysis, a conversion plan may need to be developed to migrate the network platform (i.e. UNIX to NT) or relational databases (i.e. Access to Informix) or both. ♦ Training for systems administrator and staff would need to be developed. ♦ A decision would have to be made whether the local area maintains the kiosk capability or hires a vendor. ♦ Make sure the staff is properly trained to maintain the kiosk. *Other* ♦ Document the Long Beach development process and include the lessons learned and best practices. ♦ Make sure all agreements and memorandum of understandings are in place with the sites where the kiosks are installed.

Agency	Next Steps
Riverside EDA	*Business Requirement* ♦ Conduct a needs analysis for the local areas in which this kiosk model is to be replicated. The analysis would consider the existing architecture, database and serve as the blueprint for developing and implementing the kiosk. ♦ Make allowances for local customization to the kiosk to be incorporated into the development phase. ♦ Conduct a site-survey on the location where the kiosk would be installed. *Usability* ♦ Review the usability issues and make the appropriate changes. *Technology* ♦ Depending on the results of the needs analysis, a conversion plan may need to be developed to migrate the network platform (i.e. UNIX to NT) or relational databases (i.e. Access to Informix) or both. ♦ Training for systems administrator would need to be developed. ♦ A decision would have to be made whether to maintain the kiosk capability internally or hire a vendor. *Other* ♦ Document the Riverside development process and include the lessons learned and best practices. ♦ Make sure all agreements and memorandums of understanding are in place with the site the kiosk is being installed.

Agency	Next Steps
Virtual LA	*Business Requirements* ♦ Conduct a needs analysis for the local areas in which this pilot is to be replicated. The analysis would consider the existing architecture, partner connectivity, databases and serve as the blueprint for implementing the infrastructure. Identify software, hardware, equipment and necessary upgrades in order to facilitate connectivity at partner and One-Stop Centers. ♦ Conduct a site-survey on locations where partner connectivity would be enhanced or created. *Usability* ♦ When the Social Services Directory and case management are complete, a usability study should be conducted to determine if it is ready for replication. *Technology* ♦ Depending on the results of the needs analysis, a conversion plan may need to be developed to migrate the network platform (i.e. UNIX to NT) or relational databases (i.e. Access to Informix) or both. ♦ Training for systems administrator and staff would need to be developed. ♦ Make sure the staff is properly trained to use the case management software and social service directory. *Other* ♦ Document the process to develop and implement the Frame Relay Network (FRN), making sure to incorporate the lessons learned and any best practices. ♦ Document the Virtual LA development, procurement and implementation process and incorporate the lessons learned and best practices. ♦ Make sure all agreements and memorandums of understanding are in place to allow partner agencies to share client information and caseloads.

b) **A list of recommended next steps (for both local and state levels) for combinations of pilots or, if deemed appropriate, for all pilots.**

The list of recommended next steps for local and state level pilots are the same as in a section above.

c) **Summary of Lessons Learned, Best Practices and Observations & Comments**

Lessons learned, best practices, observations and comments were recorded for each pilot project. Definitions of the following have been provided:

- **Lessons Learned** are a compilation of useful recommendations as a result of successes and problems encountered or what worked and what did not work during the project. This could include new ideas, documentation of successful processes, identification of problems that leads to improvements or shared successes that could be repeated. When possible successes could be translated into procedures that could be followed by future projects. These lessons would be helpful to those seeking to implement or replicate this technology in other areas.
- **Best Practices** are procedures, methodologies, guidelines and processes that have been recommended by those implementing the technology pilots as providing the successful or most effective results. "Best practices describe the optimum ways to perform a business process. They are the means by which leading organizations have achieved top performance. They also serve as goals for other organizations striving for excellence." *Definition of Best Practices by Arthur Andersen, Inc.*
- **Observations & Comments** are issues, concerns, observations and statements recorded by project staff or the evaluators during the project evaluation.

The following is a summary of the lessons learned, best practices, observations and comments from all the pilot projects:

♦
♦ Lessons Learned
♦ Project Preparation
♦ Developing a technical plan and vision is believed to be essential for projects because it provided a road map or blue print for the direction their organization is moving in regarding information technology.
♦ Many project leaders felt that having their partners buy in and support a common vision was a key to their success. Consequently, those that didn't have their partners buy in and support were hindered by indecision as they attempted to move forward on the project. Project decisions were delayed or not made due to this lack of acceptance of a plan or vision.
♦ Conducting a needs analysis of the hardware and software of all the agencies that would be involved in a region-wide infrastructure connectivity project was critical. One project assumed that many of the agencies were at the same level in their technology. Because of this assumption, they lost time having to conduct a needs analysis, and then bringing all the agencies up to a minimum standard.
♦
♦
♦
♦
♦
♦
♦
♦ Kiosks

♦ Once site managers saw the benefit of the kiosk, they typically wanted to move the kiosk to an area that had higher visibility. Higher visibility means areas where the kiosk was more accessible to the target population(s).

♦ Once the kiosk is installed, site managers need to understand the ramifications of moving the kiosk. They have to pay for additional electric outlets and phones lines if they do not exist in the new location. Moving electronic equipment needs to be predicated on available power sources and the extra effort involved in reconfiguring to do so.

♦ Procurement

♦ One Stop agencies need to learn how to structure contracts for website maintenance and case management. The most important aspects are to ensure the flexibility to make regular changes to the website. Do not get locked into long-term agreements without maintenance.

♦ When procuring a technology product, check the vendor's qualifications with other customers. Some product vendors do not have established qualifications and may not have a product in production.

♦ Visit sites where the vendor has installed their product. Long Beach visited the kiosk vendor locations where the kiosks were in production. They felt this provided validation that the product performed in the fashion the vendor described.

♦ Staffing

♦ Build a team of technical staff that are trained and could back each other up. Too many agencies are reliant on one person, and when that person leaves, there is not anyone to maintain the technology.

♦ Make sure the technical staff's skills are developed to maintain the technology.

♦

Best Practices

Project Preparation

♦ Do not plan technology around a budget; develop a plan and find the financial resources to fund the plan in phases if necessary.

♦ Ensure the users, staff and partners have bought in to the technology plan and its implementation before moving forward.

♦ Expose the technology team to the latest technology and have them consider the possibilities before developing a solution.

♦ Before moving forward with any technology project, research the technology and talk to technical experts from the private sector.

♦ Streamline the review process and optimize expertise by pinpointing the importance of consultant services in reviewing plans. The use of a technical consultant was beneficial, in situations where the One Stop Agency lacked the technical knowledge to design and implement an information technology project. The consultant provided technical expertise, guidance and direction to assist and make sure the project achieved its goals.

♦ Allow time for the users to adapt to the technology. Implement a change management plan. Resources and processes need to be identified to ensure that the project would be successful.

♦ Do a needs analysis before implementing technology solutions and research the technology and the solutions available.

♦ Ensure that the solution is flexible and easily expanded.

♦ Define the problem and have the public sector recommend solutions. Then consult experts in the private sector to receive their input on the considered solutions. The private keeps up

with the latest technology, so they would be able to advise the public sector of the feasibility of their solution from a technical and monetary point of view.

♦ Conduct a needs analysis of the hardware and software of all the agencies that would be involved in a region-wide infrastructure connectivity project. The benefit of connectivity would be a homogenization of technical hardware and software.

♦ Staffing

♦ It is important to establish the commitment of the staff who will implement and use the technology solutions. The commitment of the staff means they understand what the project is trying to accomplish, they clearly understand their role and responsibility to making the project successful and they agree to do what it takes to do so.

♦ Make sure those responsible for the project have the authority to make decisions.

♦ The technical people in the organization should drive the technical requirements for the solutions being considered. These technical requirements should be derived from the business requirements.

♦ Procurement

♦ Ensure that the partners' technical staff are involved in the technology evaluation and procurement process.

♦ Thoroughly define the scope of work, when procuring technology solutions.

♦ Verify that the vendor has worked on projects of a similar size.

  ♦ Structure contracts to mitigate problems.

  ♦ As a result of this project, Eastbay Works developed a list of questions to consider when purchasing technology equipment and software. They are the following :

    ♦ How will it link-up to other systems?
    ♦ What is the format?
    ♦ How are upgrades handled?
    ♦ How will it be supported?
    ♦ How experienced is the vendor?
    ♦ How much customization is required?
    ♦ Who owns the product?
    ♦ How scalable is the solution?
    ♦ What are all the legal issues?

♦ What kind of training will be required?

♦ Kiosk

♦ Select kiosk locations wisely. Some facilities would allow the kiosk to be placed in a very visible location. Other facilities would want to locate the kiosk in low visibility locations.

Observations & Comments

Preparation

♦ The cohesiveness that the partners exhibited by working together in demonstrating a regional approach was impressive.

♦ EDD issues around data confidentiality and data security were prohibitive. One Stop organizations were not able to share data because of the risk of data confidentiality being

breached or compromised. EDD does not have any policies and procedures in place that would facilitate data sharing with other external organizations.

♦ Staffing

♦ The staff on One-Stop projects typically do not specialize in technology. These pilot projects did not have the staff to keep up with the latest trends. This made it imperative to seek technical expertise outside of their agencies.

♦ Finding staff that had the skills to develop and maintain the new systems is difficult. A bigger challenge is being able to keep the Information Technology staff they have. With the current demand for IT staff, staff could very easily move on to higher paying jobs that have greater exposure to state-of-the-art technology.

♦ Some projects lacked the staff to support the project as needed, because they still had their full time One-Stop jobs to perform. This often led to important items such as documentation being ignored, which may hurt the project in the future. Most projects rely on documentation to provide an audit trail of what happened on the project as well as to have a roadmap of what do in order to replicate the project in the future.

♦ Methodology & Procedures

♦ In most instances, these projects were not aware of some key standards such as Usability (POSIT) guidelines, and BOBBY accessibility standards. The BOBBY is a web-based entity that would expose barriers, encourage compliance with existing guidelines and teach web masters about accessibility.

♦ Focus groups of target users should be used to identify usability issues and generate ideas, not validate decisions. The ideal focus group should be about 8 to 10 people. Groups over ten become difficult to manage and get the input needed.

♦ Most Information Technology projects use traditional project management tools for tracking project schedule and performance. They utilize Work Breakdown Structure (WBS) and Gantt Charts to organize and present project information. Most One-Stop pilots used timelines and milestone charts. The lack of a WBS doesn't allow assessment or accountability of staffing, resources and milestones. The lack of detail in the scope of work is traditionally an issue for IT firms working with non-technical organizations. The use of Gantt Charts provides greater visibility of scheduling and utilizing the organizations resources. It would assist in identifying gaps in resources. The use of these tools should be an added One-Stop tool set to assess performance and accountability.

♦ Though all pilot projects set out to achieve similar goals, their processes and methodologies were different due to their unique resources, experience, partnerships and local situations. There were no state level guidelines or comprehensive requirements to accomplish these projects.

-
- Technology
- The regional collaboration projects pooled existing resources and successfully provided technology infrastructure and connectivity among partners and One-Stops, which is lacking in most areas.
- Many of the pilot projects determined that they lacked technological infrastructure and connectivity among partners and One-Stop Centers. Building technology infrastructure is one the first items that they set out to accomplish.
  - If the software or hardware design changes, a review of the hardware requirements for client, server and network components of the system is necessary. This would ensure that the changes made to the original system have not resulted in a requirement change in some other part of the system. For example, converting to a different database might mean that original client systems should have either more RAM or more disk space to accommodate that change.

  Documentation
  - In all cases, written requirements or specifications for components of the systems should be documented. Replication could not be accomplished without correct information as to what is being replicated. It is not clear from a review of the surveys that all sites have written documentation as mentioned above. It is crucial to successfully replicate a project solution that proper documentation be provided.
- Though the state is interested in the possible replication of these pilot projects, none of these projects are documented in a fashion that would provide another location instruction on how to do so. Projects recommended for implementation would have to document their methodology and business process in order to replicate the solution. This documentation may take the form of a "How to Manual".
- SAIC has recognized the input received from the lessons learned, best practices and observations and comments has provided the impetus for a One-Stop Technology Methodology Outline. This could be done at the state level or by a third party entity. This outline would describe how to develop, design and implement an Information Technology pilot project, which would include how to:
-
  - Develop an Information Technology Vision
  - Conduct an Information Technology Needs Analysis
  - Create an Information Technology Plan
  - Establish Guidelines for procuring technology projects and services
  - Establish One-Stop standards and requirements
  - Implement an Information Technology Project

2. Business requirements to meet One-Stop needs.

For any project to be successful, the project must assist the organization in fulfilling its mission and goals. In order to align individual projects to the organization's mission, that organization must define business requirements; that is, those items that are necessary or essential in a project deliverable to meet the stated business goals. When information systems are included as part of a project, the information systems requirements would be derived from the business requirements to further support the overall goals and missions.

In this section of the summary report, the degree to which each technology pilot project meets defined business requirements is analyzed and rated. The rating is based on a count of business requirements that each pilot project fulfills.

California Requirements

California has developed business requirements that One-Stop Career Centers System should strive to fulfill. These requirements are specified in a report called the "California One-Stop Career Center Vision." This report provides the policy framework for implementation of California's One-Stop Career Center System, which is built upon four broad characteristics stating that One-Stop Centers must be:

♦ Integrated - offering as much employment, training and education services as possible for unified customer service.
♦ Comprehensive - offering employers and job, education and training seekers a wide array of information and easy access to needed services.
♦ Customer-focused - supports informed choice.
♦ Performance-based - defines clearly identified outcomes and measurement methods.

Technology is seen as a key factor in expanding and improving the capability of the One-Stop Career Centers. A goal of the pilot project funding was to support the development of the California One-Stop electronic information infrastructure. Therefore, the business requirements would be used to create additional requirements for technology to support the business goals and missions.

In general, the technology of the One-Stop electronic information infrastructure would provide this platform for the connection between existing service providers as well as the provision of an extensive array of easily accessible information resources to One-Stop customers. The One-Stop system would be characterized by an information-rich environment, which permits and encourages electronic self-service through direct on-line access by its customers, while still enabling those customers who need more intensive, personalized service to interact directly with professional staff.

In order to accomplish these goals set forth in California's One Stop Career Center Vision, California would develop:

♦ Improved labor market and career information delivery systems.
♦ A common automated intake process.
♦ Applications to provide automated program eligibility determination.
♦ Case management tools.
♦ Integrated customer record keeping tools.
♦ Automated reporting and cost accounting tools.
♦ A consumer reporting system which displays performance outcome histories and descriptive information on education and training providers' services and courses.

Specifically, a set of Electronic One-Stop Requirements was developed for information infrastructure projects to use as guidelines to achieve the goals established by the California Vision. These requirements are in the following categories (see Appendix A):

♦ Self Help
♦ Common Intake and Case Management
♦ Interface to Legacy Systems
♦ Provider Operations-Legacy System
♦ Legacy Systems Output Interface
♦ One-Stop Center Administration-Management Information Systems

3. Critical success factors and usability to support the One-Stop philosophy

In addition to fulfilling business requirements, a project must also support One-Stop Philosophy. Although similar in nature, meeting requirements and fulfilling philosophy may not occur simultaneously. Sometimes, organizations may have implicit requirements that were not documented, thus not tested against, and therefore, the philosophy of the organization may not be met.

In this section of the summary report, the degree to which each technology pilot project supports One-Stop philosophy is analyzed and rated.

Critical Success Factors

Critical success factors provide a means to assess a project's contribution to management's need for information concerning critical activities directly involved in meeting the organization's mission. Consequently, tracking critical success factors could be used to determine whether the pilots were successful. In some cases, only some of the criteria would apply to each pilot project. Following is a list of questions that could be asked to track critical success factors.

A. Did the partners get connected?
B. Was the equipment and software installed?
C. What is the level of operability?
D. Did the identified clients have increased accessibility to information and services?
E. Did additional clients or staff get increased accessibility to information and services as a result of the pilot?
F. What did or did not happen as planned and why?
G. Will this solution be viable as it is today?
H. Is it robust enough to allow for expansion?
I. What is the overhead to maintain it?
J. What worked best or what to avoid for future use?

Below is a summary of each project's correlation to critical success factors. As could be seen, the projects generally satisfied critical success factors; thus, supported One-Stop philosophy.

Critical Success Factors	NOVA Kiosk	NOVA Learnet	LA Virtual	Eastbay Works	San Francisco	Long Beach	Riverside
All partners are connected.	NA	NA	✔	✔	✔	NA	NA
Equipment is installed.	✔	✔	✔	✔	✔	✔	✔
Software is installed.	✔	✔	✔	✔	✔	✔	✔
System is operational.	✔	✔	✔	✔	✔	✔	✔
Clients have improved access to services and information.	✔	✔	✔	✔	✔	✔	✔
Additional clients and staff have better access than before.	✔	✔	✔	✔	✔	✔	✔
System performs as planned.		✔		✔	✔		✔
Solution is expandable.	✔	✔	✔	✔	✔	✔	✔
System is self-maintaining (has automated maintenance features).	✔	✔				✔	✔

NA = Not Applicable

Usability

A second measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solution is usable by its intended recipients. The magnitude and diversity of the population to be served by One-Stops makes usability, or "user-friendliness," a critical issue. As described in the Study Method section page 3, Dr. Allen completed a usability study to analyze this important factor.

General Conclusions
Dr. Allen points out for pilot projects evaluated, that the reading level for the Kiosk is two grade levels lower than the reading level for the websites. In Dr. Allen's opinion, the kiosks evaluated on this pilot project would be usable by at least a majority of the general public who could read English at a sixth-grade level. This is based on his inspections supplemented with tests of text readability using the Flesch-Kincaid formula for each kiosk. For more information on the Flesch-Kincaid formula or reading levels and adult literacy consult Allen, B. S., Eckols, S., & Jania-Smith, D. (1996, May 6). *"Principles For One-Stop Information & Training: Initial analysis of technical trends and usability issues"*. Sacramento, CA: Office of Workforce Policy, State of California Employment Development Department.

The NOVA Connect! Kiosk would also be usable by a majority of users who are literate in Spanish or Vietnamese, while the Riverside EDA kiosk would be usable by a majority of the general public literate in Spanish. Most of the users described above would need to explore or experiment with some kiosk functions to take full advantage of these functions. All of the kiosks would benefit from minor redesigns, but none require major reworks. However, Internet access features of the NOVA Connect! Kiosk, which was inspected as a prototype, would not be usable by most users unless they are unusually persistent. The underlying problem could be corrected with a fairly simple redesign. The Riverside EDA kiosk currently employs an advertising function, which may inhibit use by the casual passersby.

In Dr. Allen's opinion, the websites evaluated on this pilot project would be usable by a majority of the general public who have a basic acquaintance with standard web browsers and who could read English at the eighth grade level. This also based on tests of text readability using the Flesch-Kincaid formula for each website. Users with lower levels of literacy may have difficulty with some functions of the San Francisco One-Stop and Eastbay Work's websites. Most users would need to experiment and explore to take full advantage of the functions of these websites.

Rating Scale
The rating scale takes in to account the surveys and interviews based on the SAIC reviewer's assessment of the extent to which the service/product successfully addresses (a) the capabilities of the target population of users within (b) the constraints imposed by the software and hardware employed to deliver that service or product.

A rating near the *plus* end of the scale (10) indicates that, in the reviewer's opinion, there is relatively little room for improvement in usability, given the constraints of the hardware and software. A rating near the *minus* end of the scale (1) indicates that significant improvements in design are possible within these constraints.

Overall Usability Summary

Pilot Project	− Rating + 1 2 3 4 5 6 7 8 9 10
Eastbay Works	✓ ✓ ✓ ✓ ✓ ✓ ✓
San Francisco One-Stop	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
NOVA Connect!	✓ ✓ ✓ ✓
NOVA Learnet	✓ ✓ ✓ ✓
Riverside Kiosk	✓ ✓ ✓ ✓ ✓ ✓
Long Beach Kiosk	✓ ✓ ✓ ✓ ✓ ✓ ✓
LA Virtual Net	Not available for evaluation

4. Technologies utilized to determine replication at other local One-Stops

This section presents an evaluation of the hardware, software and architecture used to develop the pilot solutions. The technology analysis also studies how portable the solutions are for additional local or statewide implementation.

Replication of Technology

The importance of technology portability and replication to other local or state One-Stop centers is vital to the success of the pilot funding. Technical architecture and software must be considered before recommending any pilot program for further implementation, even if the pilot meets all One-Stop requirements, One-Stop vision and usability requirements.

To determine if the pilot program's technology supports further local and state implementation, we analyzed the following characteristics of each pilot:

♦ Capability
♦ Maintainability
♦ Scalability
♦ Cost to implement
♦ Complexity
♦ Architecture
♦ Development
♦ Performance

The analysis of each of these characteristics is described below.

Capability- studied the system to see if it was able to do what was planned in the grant application.

Maintainability – analyzed the degree to which the system could be kept in good working condition and the effort associated with maintenance. This includes staff training requirements and license agreements.

Scalability – examined the ability of the system to expand to more users or features.

Cost – examined system to see what major cost drivers exist and how they affect overall cost of replication, including upgrades, licensing, staffing and others.

Complexity – studied the system to determine major functionality and constraints that add to difficulty in operating, maintaining and expanding the system. This includes the use of proprietary software development and the use of Commercial of the Shelf software (COTS).

Architecture – examined hardware and software interfaces and dependencies and their affect on maintainability, scalability, complexity, cost and performance.

Development – analyzed the customization and standards used during implementation of the system.

Performance – studied the system to determine if it works well to meet pilot needs.

As could be seen, each of these characteristics is dependent on each other and somewhat difficult to separate; however, by separating the characteristics a more focused analysis could be performed. Specific details on each of these characteristics for each pilot are found in Appendix C in the Technology Replication Section.

Analysis

We believe that the use of common software and hardware products and assembling these products using good architecture is a key critical success factor in technology implementation. The use of common products and architecture affects all the characteristics listed above. Although common software may not provide the best technical solution, in general it provides a better balance between maintainability and cost.

Particularly, some of the key benefits of using common software products with minimal custom and proprietary products are the availability of key resources such as training for

staff, reference materials, technical support and compliance with industry standards. These resources could help reduce complexity and cost; improve capability and performance; and improve ease of maintainability and operation. These benefits are important because maintenance and operation are the major drivers in the cost of a program over its life. As many of the pilot programs found, the cost to operate and maintain the system is larger than expected. Also, having staff trained to operate the system creates another major expense.

However, in some circumstances, proprietary software is appropriate. But in these implementations, support equipment such as hardware, databases and operating systems should be commonly available. For example, using a case management vendor or kiosk vendor is appropriate, but where possible, connectivity to a database should be through a common relational database rather than a proprietary file system.

In developing technology solutions, key components such as the platform/operating system and relational database language must be considered. If the solution is web-based, then the web server, enterprise, website languages and web browser all must be considered regarding the software products used to program the solution.

The chart below gives a basic presentation of the type of technology utilized by each pilot including platform, software and features. A brief discussion of each category in the table follows.

Platform	NOVA Kiosk	NOVA Learnet	LA Virtual	Eastbay Works	San Francisco	Long Beach	Riverside
Operating System							
Windows NT	✓	✓	✓			✓	✓
UNIX				✓	✓	✓	
Database							
Relational Database – MS SQL Server			✓				
Relational Database – Informix				✓			
Relational Database – Access						✓	✓
Relational Database – Other	✓	✓			✓		
Communications Protocol							
TCP/IP Communications	✓	✓	✓	✓	✓	✓	✓
Mac Network		✓					
Web Server							
Apache					✓		
Microsoft BackOffice or IIS	✓	✓					✓
Netscape Enterprise						✓	
IBM						✓	

Operating Systems
The use of Microsoft NT or UNIX is acceptable. However, the decision must be based on expected usage and technical abilities. Microsoft NT is more maintainable with less experienced administrators, but UNIX capabilities for capacity and reliability exceed that of NT. If high capacity is needed and the technical expertise exists, UNIX should be considered; however, for most of the pilots, NT is acceptable and has performed well.

Relational Database
The use of relational databases is the current best choice over other types of databases such as object databases. Object databases are more complex and take longer to learn. This report found only two concerns with pilot use of databases. The first is the use of Microsoft Access. This database is acceptable for prototypes and low capacity. However, because

Access lacks concurrency control, it could not expand to handle increased usage. Other databases must be considered as a system grows. The second, is the use of the Macintosh relational database, Fourth Dimension. Although sometimes preferred by individuals, Macintosh systems are not in widespread use as a robust data management tool, which could lead to support issues in the future.

Communications Protocols
TCP/IP is the defacto standard computer communication protocol when using the Internet and is compatible with Local Area Network protocols. However, the use of Macintosh networking, which is not commonly used for this type of application, could lead to support issues in the future.

Web Servers
All the web servers in use for these pilots are acceptable.

Overall Technology Summary
In the chart below, the ratings are an average of how well each project met the descriptions of technology discussed in the above analysis. Each project is evaluated and given a rating on each of characteristics discussed in Replication Technology Section page 21. All the ratings are compiled and receive an overall rating for each project. The rating scale is from one being the lowest and ten being the highest. A higher rating indicates the level to technology solution would be portable and replicable to other One-Stop locations.

Overall Technology Summary

| Pilot Project | − Rating + |
	1 2 3 4 5 6 7 8 9 10
Eastbay Works	✔ ✔ ✔ ✔ ✔ ✔
San Francisco One-Stop	✔ ✔ ✔ ✔ ✔ ✔ ✔
NOVA Connect!	✔ ✔ ✔ ✔ ✔ ✔ ✔ ✔
NOVA Learnet	✔ ✔ ✔ ✔ ✔ ✔
Riverside Kiosk	✔ ✔ ✔ ✔ ✔ ✔ ✔
Long Beach Kiosk	✔ ✔ ✔ ✔ ✔ ✔ ✔
LA Virtual Net	✔ ✔ ✔ ✔ ✔ ✔

Appendix A: One-Stop Business Requirements

The table below has a check mark in the box for each pilot project that meets the corresponding requirements.

ONE-STOP BUSINESS REQUIREMENTS FOR TECHNOLOGY PILOTS

Service Tier	NOVA Kiosk	NOVA Learnet	LA Virtual	Eastbay Works	San Francisco	Long Beach	Riverside
Self Help	-	-	-	-	-	-	-
System must support multiple languages.	✓				✓	✓	✓
System must be easy to understand and use.	✓	✓	✓	✓	✓	✓	✓
Self-help clients must include One-Stop Center lobby clients.	✓	NA	NA	NA	NA	✓	✓
System must support special needs accessibility guidelines.	✓	✓				✓	✓
System must include data confidentiality and security safeguards.	✓	✓	✓	✓	✓	✓	✓
System must have the ability to provide electronic feedback from Internet web pages.	✓	✓	✓	✓	✓	✓	✓
System must be widely accessible:	-	-	-	-	-	-	-
▪ System must meet A.D.A. requirements.						✓	
▪ Multiple community career centers.	✓	✓	✓	✓	✓	✓	✓
▪ System must include electronic access (e.g. Home, lobbies, libraries, and open locations, Internet).	✓	✓	✓	✓	✓	✓	✓
▪ System should include telephone assistance. *Desired availability – 7 days/week, 24 hours/day.	✓	NA	NA	NA	NA	✓	✓
Common Intake & Case Management	-	-	-	-	-	-	-
System must comply with common Intake & Case Management guidelines.	✓	NA	✓	✓	✓	NA	✓
Interface to Legacy Systems	-	-	-	-	-	-	-
System must use Open Systems architecture.	✓	✓	✓	✓	✓	✓	✓
System may include limited shared system access.			✓	✓	✓		
System must have statewide coordinated development.	✓	✓	✓	✓	✓	✓	✓
Provider Operations-Legacy System	-	-	-	-	-	-	-
System must include data confidentiality and security safeguards.	✓	✓	✓	✓	✓	✓	✓

Service Tier	NOVA Kiosk	NOVA Learnet	LA Virtual	Eastbay Works	San Francisco	Long Beach	Riverside
System must support local, state and Dept. of Labor systems.	✓	✓	✓	✓	✓	✓	✓
System must be easy to understand and use.	✓			✓	✓	✓	✓
System must provide services that the One-Stop Center staff can be trained to administer.	✓	✓	✓	✓	✓	✓	✓
System must support multiple points of access.	✓	✓	✓	✓	✓	✓	✓
System must allow only authorized program staff to administer legacy applications, but provide for authorized partner sharing of data.	NA	NA	✓	✓	NA	NA	NA
Legacy Systems Output Interface	-	-	-	-	-	-	-
System must use Open Systems architecture.	✓	✓	✓	✓	✓	✓	✓
System must have statewide, coordinated development.	✓	✓	✓	✓	✓	✓	✓
One-Stop Center Administration-Management Information Systems	-	-	-	-	-	-	-
System must be easy to understand and use.	✓	✓	✓	✓	✓	✓	✓
System must provide Management Information Services for program administrators / Legislature / Dept. of Labor / local government / local One-Stop partner agencies.	✓	✓	✓	✓	✓	✓	✓
System must include data confidentiality and security safeguards.	✓	✓	✓	✓	✓	✓	✓
System must provide ability to access via an Intranet or local area network.	✓	✓	✓	✓	✓	✓	✓
System may provide an employer contact management system.				✓	✓		
System must have the ability to receive data from legacy application for One-Stop administration and provide mandated reporting.	NA	NA	✓	✓	✓	NA	✓
Number of Requirements satisfied	23	17	21	23	23	25	24
Conversions to Rating Scale (1-10)	8	6	7	8	8	9	8

NA = Not Applicable

The rating scale determines how closely the project met the One-Stop Business Requirements outlined above. The number of requirements satisfied for each project is divided by a conversion factor of three to provide a rating between one and ten. One being the lowest and ten being the highest. Each pilot project filled out a survey (See Appendix B) which included One Stop Business Requirements, questions about Usability and Technology. This information was gathered on each project through a combination of self-evaluation surveys and technical SAIC assessment.

Appendix B: Pilot Evaluation Survey

The Pilot Evaluation Survey was sent to each pilot project. Each pilot project completed the survey and returned it. The survey provided a foundation for analysis and interviews with project staff. The survey includes question regarding One-Stop Business Requirements, Usability, and Technology (i.e. hardware, software, architecture, maintenance, etc.).

~~EDD Pilot Evaluation~~   **Pilot Name/Location:_____**

Section 1	Usability				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
1.1	To what extent are POSIT usability principles used in your applications? Explain				
1.2	Are the number of individuals using self-help statistically measured ? Explain				
1.3	Is customer satisfaction evaluated? Explain				
1.4	Are effectiveness evaluation criteria and measurement enhancements based on customer input? Explain				
1.4.1	If yes, - how is input gathered?				
1.5	Does your One-Stop website have linkages to other workforce web sites ? Explain				
1.6	Which computer applications are web enabled ?				
1.7	Has customer feedback been used to make changes?				
1.7.1	If yes show evidence				
1.8	What is the feedback loop to make changes?				
1.9	Does program provide easy to follow guides or tutorials to guide users?				
1.10	How is data entered?				
1.11.1	Is the interface intuitive?				
1.11.2	How understandable is the application?				
1.11.3	How does the user perceive the program?				
1.11.4	Is navigation simple and transparent?				
1.11.5	Does the application give the user sufficient feedback?				
1.11.6	Do user control and freedom match the user's background?				
1.11.7	How easily can the user recover from mistakes?				
1.11.8	Is the screen design appropriate?				
1.11.9	Are the examples used to illustrate principles in the database appropriate and informative?				

Section 2	Intranet/Internet				
Section 2.1	**INTRANET**				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
2.1.1	Does your One-Stop partnership have an Intranet? If no, skip Intranet questions.				
2.1.2	What applications are available over the Intranet?				
2.1.3	Are confidentiality agreements included in a partner Memorandum of Understanding (MOU)				
2.1.4	Is the intranet widely used by the staff?				
2.1.5	Does the intranet serve a specific purpose (s)?,				
2.1.6	Is it meeting the need or purpose it was developed for? Explain				
2.1.7	Were BOBBY standards used or tested? If so show evidence				
Section 2.2	**INTERNET**				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
2.2.1	What applications are available over the Internet? If none, skip Internet questions.				
2.2.1.1	Evidence of above?				
2.2.2	What security measures have been implemented to ensure data security and confidentiality?				
2.2.3	Are confidentiality agreements included in a partner Memorandum of Understanding (MOU) ? Explain				
2.2.4	Are Internet applications security encrypted?				
2.2.5	Does the One-Stop partnership have an Internet web site? Explain				
2.2.6	Is the website host by agency or ISP?				
2.2.7	Was a webmaster required?				
2.2.8	Were BOBBY standards used or tested? If so show evidence				

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Section 3	CICM	FULL	PARTIAL	NO	EXPLANATION
	QUESTION				
3.1	Does your One-Stop partnership use a CICM system? If no, skip CICM questions.				
3.2	Were the One-Stop Task Force Common Intake and Case Management(CICM) Guidelines incorporated in your CICM system ?				
3.2.1	If no, did you know the guidelines existed? Explain				
3.3	Does the system capture all information required by partner One-Stop related systems?				
3.4	Are One-Stop Center staff CICM training requirements identified?				
3.5	Was any duplicate data entry eliminated through the CICM system?				
3.6	Does the system have data security and confidentiality safeguards? Explain				
3.7	Do all partners in the One Stop have access to CICM?				
3.8	Does CICM match the client flow?				
3.9	How well does it work?				
3.10	What manual/paper processes are still in place?				
3.11	Is the CICM accessible via the web?				
Section 4	Viability				
Section 4.1	Capability				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
4.1.1	Does the additional capacity requested in the subgrant application (PCs, Network Infrastructure) facilitate development of the local One-Stop system?				
4.1.1.1	Evidence of above?				
4.1.2	If not what additional resources were needed?				
4.1.3	What is the average uptime?				
Section 4.2	Maintainability				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
4.2.1	Is there a per workstation maintenance required?				
4.2.2	Can One-Stop staff maintain the system?				
4.2.3	Is any additional training needed for the software?				
4.2.4	Are any automated tools available to maintain the application?				
4.2.5	Is remote maintenance possible?				
4.2.6	Is outside service required?				
4.2.7	Are version upgrades planned?				
4.2.8	What is involved in an upgrade?				

Section 4.3	**Scalability**	FULL	PARTIAL	NO	EXPLANATION
	QUESTION				
4.3.1	Does the application have maximum limits, e.g. # of users, # of clients in the database, etc.				
4.3.2	Is this database expandable?				
4.3.3	To what limits?				
4.3.4	Any steps to enable statewide replicability? Describe?				
4.3.5	Does the system use TCP/IP communications?				
4.3.6	Is the system accessible to persons with disabilities or special needs?				

Section 5	**Partnership**	FULL	PARTIAL	NO	EXPLANATION
	QUESTION				
5.1	Were Service Level Agreements (SLA) developed and signed between/among partners?				
5.2	How do partners communicate (paper, fax, email, voice mail) ?				
5.3	Does your One-Stop website have linkages to other workforce web sites ? Explain				

Section 6	**CBO Linkages - Networking**	FULL	PARTIAL	NO	EXPLANATION
	QUESTION				
6.1	Do partnership CBOs have Internet access to the central career center web system?				
6.2	List CBO organizations referred by the central partnership web system?				
6.3	Are non-co-located CBO services referenced by the web page, if so explain				
6.4	Are central computer applications accessible by CBOs? Explain				
6.5	Is the common intake and case management system in the career center remotely accessible by the CBOs?				
6.6	What provisions were made for CBO's to have connectivity to the website system? Was it successful? Explain				
6.7	Is there a centralized database of workforce development resources?				

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Section 7	Project Management	FULL	PARTIAL	NO	EXPLANATION
	QUESTION				
7.1	Was a project plan developed?				
7.2	Were startup and estimated end dates defined?				
7.3	Was the statement of work clear in identifying tasks and objectives?				
7.4	Was completion criteria defined for all deliverables and the project?				
7.5	Were staff roles defined?				
7.6	Did the staff understand the work scope and their roles?				
7.7	Was the project on schedule?				
7.8	What caused deviations from cost or schedule?				
7.9	What project management tools were used to manage the project?				
7.10	Did the project result in an operational system?				
7.11	Was original project scope revised? How? How many times?				
7.12	Were estimates to complete developed at intervals during the project? How often?				
7.13	Was project tracked, monitored, and reviewed periodically?				
7.15.1	Was Project Quality Process Management defined?				
7.15.2	Was a quality plan defined?				
7.15.3	Did the project plan define, track, and monitor the project standard, procedures and milestones?				
7.15.4	Were any quality assessment procedures defined?				
7.15.5	Was process verification, validation, acceptance testing, quality reviews, and solution acceptance used?				
7.15.6	Was state DOIT Quality standards and procedures established?				
7.15.7	Was a quality checklist used?				
7.15.8	Were there outstanding issues upon project close-out?				
7.16	Did the project meet deliverables and objectives? Show evidence				
Section 8	Cost to implement	FULL	PARTIAL	NO	EXPLANATION
	QUESTION				
8.1	What licenses are required to operate the system?				
8.2	Is there a per workstation license required?				
8.3	Is there a per-user license required for any of the software?				
8.4	Does the software require special hardware to operate?				
8.5	Are there requirements for extended memory? How much memory?				
8.6	How much training is required for users?				

		FULL	PARTIAL	NO	EXPLANATION
	QUESTION				
9.1	What 3rd party products are required to operate the system?				
9.2	How many number of products were integrated?				
9.3	What middleware is required?				
9.4	Are there interfaces with legacy databases?				
9.5	Are special skills required to operate the system?				
9.6	Is data storage required for each user?				
9.7	Is there a central data base?				
Section 10	**Architecture**				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
10.1	Please describe what Hardware was implemented?				
10.2	Please describe what Servers were used?				
10.3	Please describe what Software was implemented?				
10.4	Please describe what Communication is required?				
10.5	Please describe what Security is place?				
10.6	Is there a what Firewall installed?				
10.7	Does this E-mail have system capability?				
10.8	Was the development configuration a the same as the one implemented?				
Section 11	**Development**				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
11.1	Was Off the shelf software implemented?				
11.2	Was Off the shelf software plus customization implemented? What percentage of the system is customized?				
11.3	Is that custom development specific to a location and needs to be changed for other sites?				
11.4	Were IEEE standards used in the development of the solution? if yes show evidence				
11.5	Were ANSI standards used in the development of the solution? If yes show evidence				
11.6	Were Year 2000 compliance as defined by DOIT built into the solutions?, if yes show evidence				

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Section 12	Performance				
	QUESTION	FULL	PARTIAL	NO	EXPLANATION
12.1	Does the system respond to queries in less than 10 seconds?				
12.2	What disk space is required for the system? On what is the amount of space needed dependent?				
12.3	How much memory is required?				
12.4	Are specific platforms required?				
12.5	What relational database (s) are used				
12.6	Does the system access data from other systems?				

Appendix C: Pilot Project Details

This section of the report is included to provide a detailed analysis of the seven pilot projects. This detailed analysis includes studying the business needs addressed by the pilot, determining the degree to which these needs coincided with One-Stop philosophy, analyzing the technology to determine possible replication by other agencies and supplying lessons learned, best practices and observations and comments.

Pilot Description
Each pilot project is described by answering the following questions:
♦   What business need was the pilot project attempting to address?
♦   What solutions were considered?
♦   What approach was taken to implement this solution?

♦   Support of One-Stop Philosophy
This section analyzes the degree to which each project supported overall One-Stop philosophies by addressing the following questions:
♦   To what extent did the solutions address One-Stop critical success factors?
♦   How usable was the system for the people who were the intended beneficiaries?

Technology Replication
This section analyzes the technology of each project to determine the feasibility for replication and portability by other One-Stops. The following questions were answered to determine the feasibility:
♦   How capable, maintainable and scalable is the system?
♦   Is the system costly to implement?
♦   How complex is the system to develop and maintain?

Evaluation & Recommendations
For each project this section presents lessons learned, best practices, observations and comments and recommendations. The recommendations are conclusions reached as result of evaluation criteria set forth above and input from the staff on pilot projects as well as SAIC's domain experience in One Stop Career Center and technical expertise with managing technology projects.

Appendix C 1

Eastbay Works

♦
(1) Eastbay Works

a) Pilot Description

Purpose / Business Need

Information Technology is key to improving service delivery for Eastbay Works (EBW). The Eastbay Works technology team established objectives to accomplish the following:
- Determine the capability of partner systems.
- Catalogue existing resources within Eastbay Works.
- Address gaps in the existing system.
- Invest in training human resources.

Solutions

To meet their objectives, EBW developed business and technical solutions. The table below summarizes the solutions considered and the technology planned for implementing these solutions.

Purpose / Business Need	Solutions Considered	Technology Planned
Determine the capability of partner systems.	Assess each agency's existing hardware and software and develop a plan to move forward with infrastructure and connectivity goals.	Hire a technical consultant to provide guidance, direction and recommendations regarding technology, infrastructure and connectivity.
Catalogue existing resources within Eastbay Works.	Add more content on the website and expand the web content to support special needs. Add an automatic scheduler.	Hire a contractor to expand web content and expand links to support special needs. Bridge issues: CalWORKS, Pathfinder (Youth), Cal Jobs, if available.
Address gaps in the existing system.	Cross-agency system links enabling key partners to share client information. Maintenance of existing infrastructure.	Continue technology implementation by purchasing PCs for partners; provide partners with client-tracking software, defining/ addressing Bridge issues, extending consulting contracts and firewall/data integration system support. Provide each One-Stop location resources to purchase peripheral equipment for their resource room and staff such as printers, fax machines, etc.
Invest in training human resources.	Identify staff training areas of need, such as SMARTware, desktop support and Internet.	Provide website training, contract for help desk and provide ongoing training on SMARTware.

More specifically, the additional funding from the Implementation Grant was used to implement the solutions as follows:

♦ **Cross-agency system links enabling key partners**, such as social services agencies and educational agencies, to more easily upload and download customer data between systems.

♦ **More content on the website.** This could include links to other websites, such as CalJOBS, www.sjtcc.cahwnet.gov/STCCWEB/ONE-Stop, Pathfinder (a comprehensive youth career development site), corporate, economic development, training, education, youth development, social services and other appropriate information links. More content on the web page, including policy, training and economic development information that is now in text format and needs to be converted to use on the Internet. This would add to system usability.

♦ **Expanded website content** to support special needs populations. Working with CalWORKS agencies, the School-to-Career Partnership and other service providers would expand job listings on the website to show more low and non skilled employment opportunities, part-time work, work experience, community service, internships, job shadowing, summer jobs for youth and other work activities.

♦ **An automatic scheduler** to enable customers to enroll themselves in training workshops region-wide.

♦ **Maintenance of existing infrastructure**, including on-going costs of the website, toll-free line, bar code system, cables and phones, staff training and technical support. A technical support help desk would be added to provide faster response time to One-Stop Centers experiencing technical difficulties.

Approach

The Eastbay Works plan was simple. They hired a technical consultant and contracted for most of their technical services. In addition, the collaborative pooled their technical resources, where different agencies maintained aspects of the technology. For instance, Alameda PIC hosts the network and Contra Costa has the lead on the website. Their approach was to conduct analysis first and verify that their solutions would be feasible. They then implemented the proposed solutions. Through their analysis, it became apparent that social policy issues such as confidentiality and protection of data would prohibit further attempts to link agency systems in order to share client data. This is not only a local issue, but a state and national issue as well.

b) **Support of One-Stop Philosophy**

Critical Success Factors
Evaluation Period 11/01/99 to 1/31/00

One measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solutions implemented match with the critical success factors (CSF). The following table summarizes the degree to which the pilot project solutions aligned with the critical success factors. Columns A through G represent critical success factors defined in

Summary Report section page 5 of this report which could be answered with a yes or no. There are other factors H to J that could not be summarized in the table due the descriptive nature of the response required. Detailed descriptions of each CSF are addressed following the table.

Pilot Solutions	Partner Connectivity			Client Accessibility		Maintainability of Technology	
	A	B	C	D	E	F	G
Cross-agency system links enabling key partners to share client data.	Y	Y	Y	Y	Y	Y	Y
More content on the website.			**In Process**				
Expanded web content to support special needs.			**In Process**				
Maintenance of existing infrastructure.	Y	Y	Y	Y	Y	Y	Y

A. Did the partners get connected?

Yes, through the purchase of additional equipment and software, the partners in One-Stop Centers were able to connect to the Eastbay Works Internet and Intranet, including client-tracking software SMARTware2.5.

B. Was the equipment and software installed?

Yes, the PCs, equipment and software for the partners in the One-Stop Centers have been installed, including SMARTware 2.5 and the necessary equipment for the network connectivity and infrastructure.

C. What is the level of operability?

The PCs and software are fully operational. An RFP was issued to redesign and expand the Eastbay Works' website. The contractor has been selected and the project is expected to be complete in early March. Staff has been provided with ongoing training.

D. Did the identified clients have increased accessibility to information and services?

Yes, clients in One-Stop Centers have increased accessibility to information and services.

E. Did additional clients or staff get increased accessibility to information and services as a result of the pilot?

Staff has increased accessibility to information and services as a result of the pilot. The ongoing training increased the staff's ability to provide better service to clients as a result of the pilot.

F. Will this solution be viable as it is today?

Yes, the infrastructure and connectivity are viable. Since the new website is under development and a web-based version of SMARTware is about be released, it is recommended to wait for these solutions to be completed before an assessment is made. However, the approach and analysis for both products, suggest that EBW is taking advantage of lessons learned to provide viable solutions.

G. Is it robust enough to allow for expansion?

Yes, The infrastructure was designed for possible expansion. The requirements for both SMARTware and the EBW website requested that the system have robustness for expansion. This would be determined when these solutions are complete.

H. What did or did not happen as planned and why?

EBW underestimated the ongoing cost and maintenance required to operate a website. Their plans changed, due to new grant funds being available to implement technology solutions. Therefore, their priorities changed. EBW had to be flexible enough to reprioritize, as new funds became available. The lack of local control to make basic changes to the website and not having a local vendor to respond to their requests in a timely matter were sources of frustration. Finally, they were not able to share data between partner applications and One-Stop CICM systems.

I. What is the overhead to maintain it?

A budget for ongoing cost is being reevaluated, because the overhead to maintain the technology is more than was planned.

J. What worked best or what to avoid for future?

What worked best was having the ability to leverage funds from other grants.

Also, EBW wrote a technology plan and this grant was one of the funds to provide the solution in the plan.

Usability

A second measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solution is usable by its intended recipients. The following table summarizes the usability of the pilot projects. Following the table, detailed descriptions of each usability feature are addressed.

Eastbay Works, http://www.eastbayworks.org

Question	-			Rating				+		
	1	2	3	4	5	6	7	8	9	10
1. Is the interface intuitive?	✓	✓	✓	✓	✓	✓				
2. How understandable is the application?	✓	✓	✓	✓	✓	✓				
3. How does the user perceive the program?	✓	✓	✓	✓	✓	✓	✓			
4. Is navigation simple and transparent?	✓	✓	✓	✓	✓	✓				
5. Does the application give the user sufficient feedback?	✓	✓	✓	✓	✓	✓	✓			
6. Do user control and freedom match the user's background?	✓	✓	✓	✓	✓	✓	✓			
7. How easily can the user recover from mistakes?	✓	✓	✓	✓	✓	✓	✓			
8. Is the screen design appropriate?	✓	✓	✓	✓	✓					
9. What is the overall usability?	✓	✓	✓	✓	✓	✓	✓			

General

Graphics associated with the Eastbay Works site are mostly generic and could easily be adapted to other communities. Although this site would benefit from minor redesign in selected areas, it does not appear to have usability problems serious enough to prevent access by typical Internet users, except for some of the forms-related functions such as the resume builder.

In terms of links to other sites, Eastbay Works appears to be functioning essentially as part of an Intranet, in the sense that it provides few, if any, links to the World Wide Web other than to partners and sponsors. Eastbay Works offers a fairly wide range of services including some that solicit directory or contact information directly from community members—a way to build community directories from the "bottom up". The alternative would be for Eastbay Works to conduct systematic surveys of organizations to identify their purpose and contact information for entry into its directories—an expensive and time-consuming process for a large urban region. In any case, community functions such as directory listings and the discussion functions do not seem to have been used much yet. The value of these services to East Bay communities or other communities would depend mostly on factors other than usability, such as how well they are promoted and administered, whether they compete with other services and whether they meet real community needs.

1. Is the interface intuitive?
The Eastbay Works home page is simple and fairly straightforward, providing good access to information for employers as well as job, education and training seekers. The site also includes a calendar of events. In addition, the home page displays a separate list of links to career service centers on the right side of the page and a list of sponsors on the left.

These functions are easily explored, but the overall home page layout could be more coherent. For example, a button-link to a map of center locations, located above the list, serves as the only explanatory header for this list. However, the header is not grouped with the list and is labeled with an inconspicuous cursive font. It could easily be interpreted as a separate function. Clicking on this button does indeed take the user to a map of career center locations. However, it requires a deliberate act of comparison to see that the locations on the map are the same as those in the list on the home page.

2. How understandable is the application?

The overall purpose of the site should be clear to most readers of English and is reinforced by headings in the center table (Business & Employer Services, Job Seekers, Events Calendar, etc.). Second-line indents for these headers make the text layout a little choppy. Supplementary text below the headings is set in the smallest possible font and may be somewhat difficult to read. Reducing the word count and increasing the font size to ten point would address this problem.

A box located on the right side of the page is merely a header with no link, unlike its twin on the left side of the page, which is actually a button. Thus, two interface elements with identical appearance have quite different functions. The right-side header informs users that labeled "stars" further down the page represent sponsors of the Eastbay Works website ("Alameda County," "City of Oakland," "Eastbay Works Partners," etc). Clicking on these stars takes the user to various agencies, but "Alameda County" links to the Alameda County PIC. "City of Richmond" goes to the Richmond Career Service System which is, surprisingly, not available in the list of Career Centers on the left side of the page. "Eastbay Works Partners" goes to a lengthy list of links to various organizations.

Many users would appreciate some separation of "sponsors" from the very useful list of contacts and resources also linked to these stars, as information about sponsors and resources would be valued quite differently by different users.

3. How does the user perceive the program?

Most Eastbay Works functions are easily understood and accessed. However, the resume builder requires a number of fairly complex steps and several logical considerations that may elude some users. Instructions for some steps are fairly abstract and wordy and may be confusing to some users. The grade-level equivalent of one paragraph was 9.2 (Flesch-Kincaid formula)—difficult for many job seekers in the current tight labor market

The employer and job seeker sections each contain a wealth of information and services ranging from a resume builder and database to a labor market information database. The job seeker section includes a job order function, wage and labor information and a "streaming" video viewable with appropriate browser plug-ins. The video is optimized for various download speeds and played well on the evaluator's test equipment, at both low and high (20 and 300 KBS) modem speeds.

Both the employer and job seeker sections include options for free e-mail. A well-designed calendar of events is available from the home page and from some other sections.

The job seeker section includes a discussion forum but a similar feature is not available for employers, for whom it might also be useful. The forum has apparently not been used much; it displays less than two-dozen postings over half a year, ten of which occurred on a single day about a single topic. (This count assumes that no discussions have been removed; the earliest posting is 5/26/99). This forum might continue largely unused unless promoted appropriately and hosted by a career counselor or other support staff.

Several functions in the employer and job seeker sections require a login name and password, but registration is free. Although the password entry form is fairly easy to use, it does require the user to enter a five-digit identification number (issued by the system) in addition to a user-designated password. An identification number may be necessary to avoid duplications (e.g., when two people named Paul Jones each decide to use their last name as a password) but, if the identification number is truly unique, it is unclear why a user should also need to enter a password.

Even after login, a user in the job seeker section who moves to other services, such as the calendar of events via the home page, must login again to use protected services in the job seeker section. However, the user does not encounter this inconvenience when accessing such services through the menu bar in the job seeker section.

4. Is navigation simple and transparent?

The designers have minimized browser conflicts by avoiding frames in most pages. Instead of frames, they use a table layout to provide continuously available menus (employer and job seekers sections only). These menus make it possible for users to access a variety of functions without getting buried in the many layers of the website.

The center table on the main page encompasses links to the core functions of the Eastbay Works website. These links have the appearance of headers; therefore some novice Internet users may not perceive them as links. This problem could be addressed by using graphics that look more like clickable controls or appear more "pressable." Blue drop shadows behind these links/headers could make them appear "fuzzy" to some users.

Links to the various Alameda Career Service Centers (through the left-side list on the main page) are actually links to pages maintained by Eastbay Works, whereas links to centers in Contra Costa County take the user to pages maintained at another website. This arrangement is relatively transparent to the user, who could return to Eastbay Works through logos strategically placed on the externally located pages, although some of these logo-links do not work. This same technique is used to

return users from forays to some "sponsor" pages. But when users click on "State of California" or "Alameda County," they link to a page with no obvious return to Eastbay Works.

This illustrates an important limitation of the overall strategy of linking users to sites and then allowing them to return by clicking on a logo at the other site: negotiations must be made with every external site for placement of the logo-link. This, in turn, reflects a fairly subtle and probably deliberate limitation of the Eastbay Works architecture. It appears to have almost no links to websites other than those described above, which are part of the Eastbay Works consortium. Eastbay Works seems to have forgone links to One-Stop related sites such as America's Job Bank, and a host of other resources. In this sense, Eastbay Works functions more like an *Intranet* than a window on the World Wide Web.

Finally, roughly a dozen minor bugs surfaced during exploration. For example, clicking on "About Eastbay" from the employment services directory resulted in an error message about database query fields.

5. **Does the application give the user sufficient feedback?**
Feedback is mostly conventional, i.e.; pages appear when links are clicked. The constantly available menu in the employee and job seeker sections includes green "indicator lights" to remind users which section they are currently viewing. Specific feedback also appears in the form of occasional error messages and special instructions (e.g., when a user enters an incorrect password). Errors related to programming bugs seem to be handled gracefully. In every case encountered, the user was able to simply click a button and move on. Eastbay Works solicits user reactions and comments via a "Feedback Survey" which includes questions on user satisfaction and "user-friendliness."

6. **Do user control and freedom match the user's background?**
Users who have some exposure to the Web would probably experience few problems with basic navigation, but more complex tasks involving data entry could be confusing. The system provides only a few links to help or advice (e.g., for the resume builder and e-mail functions), but these links appeared inoperable at the time of the review. Help for the login function includes a fairly wordy rationale for registration requirements. But practical advice is formatted as a fairly dense paragraph rather than a more readable format such as numbered steps or bulleted suggestions. Eastbay Works does not include options for viewing in languages other than English.

Spot checks of text readability for Eastbay Works yielded level estimates ranging from ninth to eleventh grades (Flesch-Kincaid formula). This would be difficult reading for many users who have not completed high school or who use English as a second language. Since the labor market is currently tight, many people who are out of work are likely to have rather low levels of literacy and would find the readability of some of Eastbay Works' pages quite challenging.

The evaluator assessed the home page (only) of Eastbay Works to test its compliance with *Web Content Accessibility Guidelines 1.0*, published by the World Wide Web Consortium (http://www.w3.org/TR/WAI-WEBCONTENT/). This assessment, which employed BOBBY 3.1.1 (http://www.cast.org/BOBBY/), an HTML checker, focused on the needs of visually impaired people who use text-to-speech readers. BOBBY 3.1.1 identified two types of problems that need to be addressed in order to achieve BOBBY certification at "Priority 1 Accessibility Level." The first problem is that graphics on the home page have no alternative text labels for graphic content such as logos or headers. The second problem is that no alternative text content is supplied for applets on the home page. These concerns, which are easily addressed, probably extend to other Eastbay Works website pages, particularly when graphics contain critical orienting information. For the home page, BOBBY 3.1.1 estimated a page download time of 24 seconds over a 28.8 KBS modem which compares favorably to most commercial and non-commercial websites.

7. How easily can the user recover from mistakes?

The Eastbay Works website is robust and most user errors could be reversed via browser back-page functions. In addition, forms generally require that all fields be completed and provide specific directions to users about what to enter when they have omitted information.

8. Is the screen design appropriate?

This site displays well on virtually any size monitor, including 640x480 pixel displays. Many users would find page layouts pleasant and uncluttered, although there are exceptions. The home page is fairly conservative. Heavily beveled borders of the center table seem thematically unrelated to the rest of the layout. The Java-enabled animation in the upper left would not work on some browsers and might, therefore, be mysterious to some users.

A number of pages wrap text around graphic elements such as cartoon characters or small photos. This is a well-established convention in both print and electronic media. However, many of these wrap-arounds are set with ragged left margins which make them less readable because readers not easily predict the starting point of successive lines of text and have to "search" for the beginning of each line. Users would encounter similar problems with some text segments in which entire paragraphs are center-justified. Body text should generally be fully justified or justified left with a ragged right margin.

The layout and fonts for the Labor Market Information section are not as well conceived as in the rest of the website and make excessive use of centered text for instructions and notes. Use of the Comic Sans MS font, set in bold, detracts from readability particularly in smaller font sizes. This section is also (apparently) the only section to employ a browser frame, which could compromise the functionality of older browsers. This frame does not appear essential.

9. What is the overall usability?

Good. Most of the usability problems associated with this site are unlikely to impede typical users, providing they have some experience with browsers. Most problems are minor and could be addressed through redesign at relatively low cost.

c) Technology Replication

The ability to replicate technology is an important investment for One-Stops. To measure the potential for technology replication, viability, cost, complexity, architecture, development environment and performance are assessed. The following table summarizes each of these features of replication. Detailed descriptions of each feature are provided following the table.

Eastbay Works Technology Rating

Feature	**-** Rating **+**
	1 2 3 4 5 6 7 8 9 10
Capability	✔ ✔ ✔ ✔ ✔ ✔ ✔
Maintainability	✔ ✔ ✔ ✔ ✔
Scalability	✔ ✔ ✔ ✔ ✔
Cost	✔ ✔ ✔ ✔ ✔ ✔
Complexity	✔ ✔ ✔ ✔ ✔ ✔ ✔
Architecture	✔ ✔ ✔ ✔ ✔ ✔ ✔
Development Environment	✔ ✔ ✔ ✔ ✔ ✔
Performance	✔ ✔ ✔ ✔ ✔ ✔ ✔
Overall Technology Rating	✔ ✔ ✔ ✔ ✔ ✔

Eastbay Works Case Management System-SMARTware 2.5

Capability
♦ Additional PCs were purchased for partners to provide connectivity to the One-Stop systems.
♦ The average uptime is 99.9%, 7 days a week 24 hours a day.

Maintainability
♦ There is a per seat license for Informix. There is maintenance fee to maintain the SMARTware 2.5 code.
♦ The IT staff does need technical assistance on the operation of the code and there is a maintenance agreement on the code.
♦ There are automated tools to telnet in and maintain fixes, etc.
♦ Remote maintenance is available.
♦ Outside service is required, to maintain the SMARTware software.
♦ Version upgrades are planned.
♦ An upgrade to the SMARTware2000 version 3 is planned, which is a web-based system. A database conversion is required.

Scalability
♦ The limit for the number of users is based on the license agreement with Informix.
♦ The database is expandable to, depending on the number of concurrent users and client records required for the database.
♦ The system uses TCP/IP.
♦ The SMARTware system is not accessible to persons with disabilities or special needs.

Cost to Implement
♦ An Informix license and operating system license for UNIX is required to operate the system.
♦ There is a cost per user to use Informix.
♦ This does not require special hardware.
♦ There is no requirement for extended memory.
♦ There is a one-day training required for users.
♦ There is specialized training required for technical staff.
♦ When the IT staff are doing installation, the production system runs in parallel to the new system until they are ready to cut over to the new system. There is no more than a month of testing.
♦ The entire system was customized.
♦ No data conversion was required.

Complexity
♦ Anita Terminal emulator is required to operate the system.
♦ No third-party product was integrated.

♦ There is one interface to the JTA legacy system. SMARTware is able to make calls to the JTA database and display that data within SMARTware
♦ There are no special skills required to operate the system.
♦ There is no data storage required for each user.
♦ There is a central Informix database.

Architecture
♦ Sun Solaris is the required hardware.
♦ Informix is the required database.
♦ UNIX is the required operating system.
♦ The required custom SMARTware software is written in C++.
♦ A telnet connection using the Anita emulator is required.

Development
♦ SMARTware is an off-the-shelf product.
♦ 20 to 30% of the software was customized.
♦ The customization could be used elsewhere.
♦ SMARTware is Y2K compliant.

Performance
♦ The system responds to informational queries the databases in less than 10 seconds.
♦ 16 MB of memory is required in order to operate the system.
♦ Specific platforms are required to operate the system.
♦ Informix is the relational database used that is used to operate the system.
♦ The system accesses data from other databases, the intake database and the JTA database.

East Bay Works Website

Capability
♦ From the available information, which includes log reports and usage information, the Eastbay system has met the development requirements to facilitate a local One-Stop system.
♦ No additional resources appear to be needed.
♦ The average uptime is 99.9%, 7 days a week 24 hours a day.

Maintainability
♦ There was no response from Eastbay works to this section.
♦ The basic design of the system lends itself to typical maintenance solutions. This area would need to be considered when making final deployment decisions.

Scalability
♦ It appears from the information provided that the system is scaleable, assuming funding is provided to do so.
♦ As it is an Internet-based system, TCP/IP communications is used.

♦ According to the survey, local institutional funding is being used to address implementation of various additional tools to support the system's use by persons with special needs including assistive listening devices, wheel chair-accessible stations and large-screen and zoom text computers. Additional funding support is being requested for equipment and systems that provide access to services for persons with special needs.

Cost to Implement
♦ Each system requires an Operating System, Netscape, MS Office, Foolproof and Anti-Virus licenses.
♦ Both "per user" and workstation licenses are required to operate each software application.
♦ No customization was required of the COTS software listed.
♦ Other responses in this area were not given.

Complexity
♦ The third-party products required to operate the system are as follows: Operating System, Netscape, MS Offices, Foolproof and Anti-Virus.
♦ There are no interfaces with Legacy systems/databases.
♦ There are no special skills required to operate the system.
♦ Data storage is not required for each user.

Architecture
♦ The hardware implemented included Pentium class workstations, Cisco routers, 3Com Hubs, and HP Printers.
♦ No servers were used in the implementation, because the web designer hosted the site.
♦ Implemented software includes Operating System (Win95/98).
♦ Basic Internet/Intranet access via either a dedicated or dial-on-demand link is required.
♦ All sites are protected by router-based firewalls.
♦ There is e-mail capability.
♦ The development system was the same as the one that was implemented.

Development
♦ All software was COTS.
♦ No custom software was used.
♦ The California Department of Information Technology (DOIT) approved all application products and solutions.

Performance
♦ Informational query response is less than ten seconds.
♦ No disk space requirements.
♦ RAM requirements: 16MB minimum.
♦ No specific platforms are required.
♦ No relational database was used.

d) Evaluation & Recommendations

Lessons Learned
Project Preparation

♦ Utilize Cross Regional Partnerships to leverage resources to develop technology using partner funds. A good example is the partnership that has been formed by SMARTware and I-Train. These partnerships provide stewardship that gives flexibility to deal with changes in the future.

♦ It is better to pool resources to build the infrastructure, instead of piecing small solutions together using individual resources. This is where EBW was most effective.

♦ Hire a good technical consultant to act as a guide through the process of formulating the direction of the solutions that would be implemented. EBW found this to be very effective.

♦ Structure regional collaboratives effectively. Eastbay Works has a Regional Planning Team with all the major partners. This team is made up of the four One-Stop coordinators from each SDA and the EDD manager. Each coordinator is on or chairs various committees, teams and work groups. These coordinators make things happen and marshal making sure the tasks get accomplished and information is being communicated. As a team, these coordinators share information and status about the various committees and provide coordination of activities. They have a very good partnership. Most importantly, these coordinators have a shared vision and a good partnership that continues communicating on the issues.

Staffing

♦ Have more than one person that could maintain the systems. Build a technical team of technical people. If someone leaves or moves, the systems should not depend on that one person, thereby placing the whole operation at risk.

♦ Learn how to structure website contracts. The Eastbay Works contract for the website was lacking flexibility. Their current contract did not have the flexibility to make changes. Eastbay Works learned that they had underestimated the ongoing cost to maintain their website.

♦ EBW underestimated the length of time necessary for users to adapt to new technology.

Best Practices
Project Preparation

♦ Ensure that the solution is flexible and easily expanded.

♦ Include private sector companies up front. Utilize the local technological resources by having the technological experts come in to talk about the current technology and what is available.

♦ Research the latest technology and consult with the technical staff.

♦ Convene with the public sector to see what technology they currently have in place and what their future plans are. Utilize user groups around developing the product, because it helps drive the quality. User groups are helpful for selling, developing and producing a final product. In addition, the user groups created a level of awareness.

♦ Do a needs analysis before implementing technology solutions.

♦ Research the technology and the solutions available.

♦ Consult the technology expertise in the private sector and get their input on the solution being considered.

♦ Expose the technology team to the latest technology and have them consider the possibilities before developing a solution.

♦ Define the problem and have the public sector recommend solutions.

Procurement

♦ Structure contracts to anticipate what could get in the way.

♦ As a result of this project, Eastbay Works developed a list of questions to consider when purchasing technology equipment and software. They are the following :

  ♦ How would it link-up to other systems?
  ♦ What is the format?
  ♦ How are upgrades handled?
  ♦ How would it be supported?
  ♦ How experienced is the vendor?
  ♦ How much customization is required?
  ♦ Who owns the product?
  ♦ How scalable is the solution?
  ♦ What are all the legal issues?
  ♦ What kind of training would be required?

Observations and Comments

Project Preparation

♦ Originally, an interface would be built between One-Stop Career systems and social services agencies such as EDD. However, all the policy issues on confidentiality and data security hindered implementation of this solution. EDD did not have any policies or procedures that address this situation. Instead, social services staff in One-Stop Centers has access to case management software to provide shared case management.

♦ A RFP was designed to procure services to redesign the website.

♦ Funds were used for each center to address resources that were lacking.

♦ All the partners have bought into and believe in a common vision.

♦ EBW has done a good job giving the user input on the decision and design process.

♦ The original philosophy on the website is that EBW would maintain the database. They bought the database with all the links and no one would worry about owning the data.

Partnership

♦ EBW partners seem to share and pool resources well. They provide a good example of how One-Stop collaboration could work.

♦ EBW partners work well together and are aware of their collective resources.

♦ The cohesiveness that the partners exhibited by working together in demonstrating a regional approach was impressive.

Project Management

♦ There was a committee structure for project management that designed the grant responses. When the grant was funded, they set-up a committee to manage the resources.

♦ In the minutes of the regional planning team meetings, all grants and projects are updated on their progress. The scope is revised through the different teams. This is where the coordinators get their status.

Technology

♦ A component of the technology pilot was the design and implementation of bar codes to track clients and client activities. The bar code tracking system was integrated into the SMARTware client tracking software. When a client initially registers in a career center, they are assigned a bar code ID on an EBW card. This card has a bar code and this code is associated to the client's Social Security number. A bar code is also assigned to core services in the EBW career center system. Every time a client visits a career center, his/her activities could be tracked. During the sign in process, their bar code card is scanned into the system for verification. The bar codes for the particular services they are seeking are also scanned. These activities automatically update the client's history record. This method of tracking clients is a cost-efficient way of tracking client activities for WIA, which is based on activities instead of eligibility.

Recommendations

♦ Since this pilot is not complete, it is recommended to wait for the new website to be complete before any recommendations or considerations are made for local replication. The design is a result of lessons learned from the first website they developed. This pilot warrants consideration when the new website is complete. Eastbay Works purchased PCs for their partners in the One-Stop Centers so that they would have connectivity to the Internet and the client-tracking software SMARTware. They recently contracted with a vendor to expand and enhance their present website, which would not be operational until March.

♦ The bar-code reader is the only project that is ready for local implementation. Though a current version of SMARTware is portable, the web-based version is expected to be in production in March. This solution should be reviewed when it is ready for production. It is also a result of previous lessons learned and could be a good solution for local implementation. The SMARTware client-tracking program, a bar-code reader, has been integrated to track client activities more automatically in the centers.

♦ The process EBW used to develop, plan and implement these solutions should be documented and replicated. The hardware and software implemented is not that significant, since technology turns over so rapidly. However, the collaborative committee structure that is in place should also be reviewed for replication. Not just the structure, but the key elements that make this regional collaboration effective and successful.

Next Steps

♦ Document the EBW process for reviewing, developing and implementing technology solutions.

♦ Review EBW's new website, when it is ready for implementation.

♦ Review the SMARTware2000 case management system when it is ready for implementation.

♦ Document the bar code process and develop a manual for set-up, business rules, operation and implementation of the bar coding system. Define the minimum specifications for the bar code equipment and bill of materials.

♦ Ensure that the client system requirements do not change once the website and Case Management components have been completed. If no client requirement specifications exist, document them.

♦ Also, ensure that, once developed, the bar code/case management system and website "server-side" systems requirements are clearly documented, including specifications for minimal acceptable performance.

Appendix C 2

San Francisco
One-Stop

(2) San Francisco One-Stop Center System

a) Pilot Description

Purpose / Business Need

The purpose of the project is to create interactive electronic linkages that guide customers through the San Francisco One-Stop services database (SFOS) and offer service providers tools to analyze transaction history generated from customers.

Solutions

To meet their objectives, San Francisco developed business and technical solutions. The table below summarizes the solutions considered and the technology planned for implementing these solutions.

Purpose / Business Need	Solutions Considered	Technology Planned
SF One-Stop would build sufficient capacity to insure all partners have sufficient hardware and software resources to access SFOS as well as necessary to use SFOS effectively.	Purchase partners PCs, software and accessories needed to connect to the website.	Buy PCs with fax modems, CD-ROMs, Zip disks, laser printers and two-year ISP service for partners in the One-Stop.
One-Stop would offer customers a consistent, integrated and coherent view of the navigation paths within the SFOS site.	Develop a web-based, interactive application that guides customers to referral, job, education and training services.	Develop an RFP to procure a website developer.
One-Stop to deploy an ad hoc query tool within SFOS so that it and its partners could use these transactions to generate metrics and analysis about its customers.	Develop a web-based application with a database engine.	Develop an RFP to procure a website and database developer.

Approach

The San Francisco One-Stop Plan includes roll out and installation of equipment and software to partner sites in order to connect to the Internet and access e-mail. At the same time, they worked with their partners to procure the services of a web developer to develop the San Francisco One-Stop site. In their approach, they intended to develop an Internet and Intranet in two phases. In Phase I, San Francisco One-Stop Interactive (SFOSI) was developed. San Francisco One-Stop Analyzer (SFOSA) would be developed in Phase II. They plan to issue RFPs for Phase II.

b) Support of One-Stop Philosophy

Critical Success Factors
Evaluation Period – 11/01/99 to 1/31/00

One measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solutions implemented match with the critical success factors (CSF). The following table summarizes the degree to which the pilot project solutions aligned with the critical success factors. Columns A through G represents critical success factors defined in Section A of this report, which could be answered with a yes or no. There are other factors H to J that could not be summarized in the table due the descriptive nature of the response required. Detailed descriptions of each CSF are addressed following the table.

Pilot Solutions	System Implemented	Partner Connectivity			Client Accessibility		Maintainability of Technology	
		A	B	C	D	E	F	G
Develop One-Stop partners' capacity for on-line access.	Purchased PCs with modems, CD-ROM, laser printers and free ISP connection for Internet access.	Y	Y	Y	Y	Y	Y	Y
SFOSI	Yes.	Y	Y	Y	Y	Y	Y	Y
SFOSA	RFP for Phase II is under evaluation.	On hold for review						
Deploy hardware/software to enable CBO partner agencies to get on-line.	Yes. Purchased PCs w/ modems, CD-ROM, laser printers and free ISP connection for Internet access.	Y	Y	Y	Y	Y	Y	Y

A. Did the partners get connected?
Yes, San Francisco PIC purchased hardware and software for the CBO partner agencies to get connected to the SFOSI Internet and Intranet.

B. Was the equipment and software installed?
Yes, both hardware and software were purchased and installed for the CBO partner agencies. The San Francisco One-Stop Interactive website is up and running. An RFP was issued for SFOSA that resulted in a failed bid due to lack of bids. This project is under review.

C. What is the level of operability?
The web-based application is fully operation. The site is only in English. There are splash pages that give some general information and referrals in Spanish, Cantonese, Arabic and Russian. During development, they found that translations for Cantonese, Arabic and Russian are symbols, which require a lot of graphics as opposed to text.

D. Did the identified clients have increased accessibility to information and services?

Yes, clients have increased accessibility to the full array of self-services for One-Stop Career Centers, including labor market information and community resources.

E. Did additional clients or staff get increased accessibility to information and services as a result of the pilot?

Yes, partner agencies increased accessibility to information and services through their ability to connect to the Internet and communicate via e-mail. The SFOSI pilot increased accessibility to services to clients over the Internet. They are able to access services without having to travel to physical locations.

F. Will this solution be viable as it is today?

Yes, the methodology to provide connectivity is more important that the software and hardware that was installed.

G. Is it robust enough to allow for expansion?

Yes, SFOSI is a simple web-based solution that was designed for future expansion.

H. What did or did not happen as planned and why?

San Francisco PIC had planned to launch a marketing campaign to promote the SFOSI site. However, the campaign was never launched due to inability of the partners to come to a decision about the marketing campaign. The Phase II SFOSA RFP was late getting issued due to delays in the development and approval process. The RFP resulted in a failed procurement, because they only received two bids.

I. What is the overhead to maintain it?

The overhead is the cost to have a web master maintain the site.

J. What worked best or what to avoid for future?

The focus groups for job seekers, employers and partners worked best because input of the target users was sought in the early portion of the development phase.

Usability

Graphic and text associated with the SF One-Stop site are mostly generic and could easily be adapted to other communities. This site appears to have relatively few usability problems and all are minor with the possible exception of text that might be difficult for people with poor reading skills and potential problems with multiple windows. A complete review of database functions was beyond the scope of this review, but data entry forms appeared to be well thought out and well presented. This evaluation did not attempt to assess the portability of the site's underlying file architecture or database functions, but it is quite possible that they could be adapted to use in other communities as well.

The SF One-Stop site provides two major functions in addition to the community calendar: links to other websites and access to a database of client and job applicants. The value of these services would depend mostly on factors other than usability, such as how well they are promoted and administered, whether they compete with other services and whether they meet real community needs.

One-Stop San Francisco: http://www.onestopsf.com.htm

Question	- Rating +
	1 2 3 4 5 6 7 8 9 10
1. Is the interface intuitive?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
2. How understandable is the application?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
3. How does the user perceive the program?	✓ ✓ ✓ ✓ ✓ ✓ ✓
4. Is navigation simple and transparent?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
5. Does the application give the user sufficient feedback?	✓ ✓ ✓ ✓ ✓ ✓
6. Do user control and freedom match the user's background?	✓ ✓ ✓ ✓ ✓ ✓ ✓
7. How easily can the user recover from mistakes?	✓ ✓ ✓ ✓ ✓ ✓ ✓
8. Is the screen design appropriate?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
9. What is the overall usability?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

General

1. Is the interface intuitive?
Users who have a fairly minimal acquaintance with Internet browsers should find this site easy to use, although most narrative segments are written at roughly tenth to eleventh grade reading level.

2. How understandable is the application?
The overall purpose of the site is clear and understandable. The site emphasizes links to a wide variety of self-help resources as well as access to service organizations. Most site content consists of annotated links to other sites, including city and state agencies, community-based organizations and educational institutions. A major link to the San Francisco Public Library allows users to search for community organizations, events and the like.

A suite of related data entry pages relies on a common database of clients and job seekers. Employers could access this database through a password-protected interface that supports searches for pre-screened job applicants by education, general job skills and industry-specific skills. Search factors are easily entered via an interface based on simple lists and check-boxes.

In the Agencies section, a similar password-protected segment supports searches for specific clients by name or Social Security number via a fill-in form. A separate page, similar to that in the Employer section, supports searches for job applicants. The Agencies section provides a password-protected page for entering client intake data. This page includes fill-in forms related to the identity and characteristics of the client as well as checkboxes for job skill information.

The site offers a calendar of community events. Privileges for entering and deleting events are password protected. At the time of this review, the calendar apparently contained no entries, suggesting that this function might benefit from promotion or better management.

3. How does the user perceive the program?

The overall purpose of this site would be immediately clear to most readers of English. The main page uses a file-folder metaphor with three major tabs: Agencies, Employers and Job Seekers. Non-English readers may derive some assistance from photographic themes and from limited information in other languages.

4. Is navigation simple and transparent?

Navigation within the website is simple and transparent throughout. In addition to well-designed bulleted menus on the main page of each of the three sections, the site contains a very simple, efficient "site map" (outline) of the site's content. Unlike many site maps, users could click on any element in the outline and go to the corresponding page. Surprisingly, the order of columns in the site map does not match the order of folder tabs on the main page. There does not appear to be any reason why the site map and the folder tabs do not match.

The designers have elected to avoid HTML frames, which could compromise the functionality of older browsers. To handle links to other sites while keeping a pathway open for users to return to the SF One-Stop site, the designers employ a simple strategy that introduces its own usability problems: clicking on a link to another site simply opens a new browser window for that site. This could work, if users realize that they must close the new window to see the SF One-Stop site once again. To their credit, the designers have included instructions to this effect in the site's Help section, but the Help section is only linked to the Job Seeker section, and information about the window stacking problem is buried at the bottom of the Help page.

It is quite possible that many users would have problems with too many "stacking windows." Many design guidelines recommend reminding or warning users of this problem from time to time. It may be possible to write the HTML code in the SF One-Stop site to specify that new windows open in a somewhat smaller size than the SF One-Stop site itself, thus allowing users to see and more easily activate the SF site.

5. Does the application give the user sufficient feedback?

Feedback is mostly conventional, i.e.; pages appear when links are clicked.

6. Do user control and freedom match the user's background?

The main page includes a menu bar with buttons for Spanish, Chinese and Russian; each labeled with language specific-characters. At the time of this review, the SF One-Stop site offered only one page of text for each foreign language. Surprisingly,

the Spanish page is not a translation of the main page, but a set of directions on how to find further assistance at service centers. This may also be true of the Chinese and Russian pages.

Spot checks of text readability for large paragraphs in the SF One-Stop site yielded estimates ranging from tenth to twelfth grade (Flesch-Kincaid formula). Similar estimates were obtained for paragraphs from the Job Seekers section. This suggests that it would be hard to read for many users who have not completed high school or who use English as a second language. Since the labor market is currently tight, many people who are out of work would have fairly low levels of literacy and would find the readability of some SF One-Stop pages quite challenging. A notable exception to the high grade-level equivalents described above are estimates obtained from the site's "Help" page, which had an average readability equivalent to seventh grade. This is quite appropriate for this type of site.

The Help page contains simple directions on how to use a Mac or PC-based browser, how to navigate the site, how to use the site map and other tips specific to the SF One-Stop site. There is no link to the Help page from the Employer and Agency sections, only from the Job Seeker section.

The evaluator assessed the home page (only) of SF One-Stop to test its compliance with *Web Content Accessibility Guidelines 1.0*, published by the World Wide Web Consortium (http://www.w3.org/TR/WAI-WEBCONTENT/). This assessment, focused on the needs of visually impaired people who use text-to-speech readers and employed BOBBY 3.1.1, an HTML checker (http://www.cast.org/BOBBY/). BOBBY 3.1.1 identified a single class of problems that need to be addressed in order to achieve BOBBY certification at "Priority 1 Accessibility Level" the lack of alternative text lables for graphics." These are pop-up text labels that serve as a text substitute for logos or other "pictures." Text-to-speech readers could read alternative text labels. However, the BOBBY analysis is quite misleading in this case. A manual spot check shows that virtually all important graphic elements in the SF One-Stop site do have alternative labels. The BOBBY analysis apparently identifies non-essential graphic elements such as thematic photos that the designers deemed not worth labeling. For the home page, BOBBY 3.1.1 estimated a page download time of 25 seconds over a 28.8 KBS modem which compares favorably to most commercial and non-commercial websites.

7. **How easily can the user recover from mistakes?**
   This site seems fairly robust in this regard. Users could reverse most errors in navigation by using the browser's "back" button. No bugs were encountered and no major error messages were encountered.

8. **Is the screen design appropriate?**
   This site displays well on virtually any size monitor, including 640x480 pixel displays. Many users would find page layouts pleasant and uncluttered. The overarching theme is essentially "many types of people, many types of work"—a staple of One-Stop websites across California. The SF One-Stop site is somewhat

unusual in its use of a multicultural theme. The photos portray a community with a wide range of racial and ethnic groups.

Page layouts make good use of white space and uncrowded text blocks. Uses of sans serif fonts make for very legible text. Text elements such as heading paragraphs, lists and bullets are used very consistently and they structure content to indicate subordinate relations. For example, lists of topics or steps are broken into separate elements and subordinated to appropriate headers. Color themes and layout are coherent and consistent.

9. What is the overall usability?

The overall usability is very good. This site is likely to be usable by and attractive to a fairly wide range of users. Most usability problems are very minor and could be addressed through redesign at a relatively low cost. The high reading difficulty for text pages could be addressed by some fairly straightforward copy editing. The problem of stacking windows probably requires some additional usability testing (if it is indeed a problem) and a careful consideration of various design alternatives.

c) Technology Replication

San Francisco One-Stop Technology Rating

Feature	− Rating +
	1 2 3 4 5 6 7 8 9 10
Capability	✓ ✓ ✓ ✓ ✓
Maintainability	✓ ✓ ✓ ✓ ✓ ✓ ✓
Scalability	✓ ✓ ✓ ✓ ✓ ✓ ✓
Cost	✓ ✓ ✓ ✓ ✓ ✓ ✓
Complexity	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Architecture	✓ ✓ ✓ ✓ ✓ ✓ ✓
Development Environment	✓ ✓ ✓ ✓ ✓ ✓ ✓
Performance	✓ ✓ ✓ ✓ ✓ ✓ ✓
Overall Technology Rating	✓ ✓ ✓ ✓ ✓ ✓ ✓

Capability
♦ It is unclear if San Francisco has met this requirement. In the survey they wrote: One-Stop would build sufficient capacity among all partners so that each could fully participate in and contribute to SFOS without taxing individual partner's internal resources. The effort here is to not only ensure that each partner has sufficient hardware, software and training to access SFOS, but to remove as much of the technical burden as possible in maintaining SFOS.

Maintainability
♦ Remote maintenance is possible.
♦ One-Stop staff could maintain the system.

Scalability
♦ It appears from the information provided that the system is scaleable, assuming funding was provided to do so.

Cost to Implement
♦ The licenses that are required to operate the system include Sun Solaris O/S, Solaris 7 System Administration AnswerBook Documentation and Solstice Backup 5.1 Server Edition. These are the only commercially licensed software used.
♦ There is no per workstation license.
♦ There is no per user license required for any software.
♦ The software requires Sun Hardware.
♦ There is no training required for users.
♦ The technical staff should understand Solaris System Administration, Apache Web Server, MySQL and PERL.
♦ No data conversion was required.
♦ Customization consisted of PERL scripts for the calendar and Skills Bank/Employer's Database.
♦ No new staff was hired.

Complexity
♦ The third-party products required to operate the system are as follows: For administration, a web browser and Telnet client to connect to the server and an FTP client to upload files. For visitors to the site, a web browser is required.
♦ There were no products integrated and nothing was interfaced.
♦ No middleware was used.
♦ There are no special skills required to operate the system.
♦ Data storage is not required for each user.
♦ There are two central databases: a database for the Skills Bank and a database for the calendar.

Architecture
♦ The hardware implemented is Sun Solaris.
♦ An Apache server was used.
♦ PERL script and HTML were the programming languages used.
♦ The database is MySQL.
♦ The security used is UNIX Password Security Utility.
♦ There is no e-mail capability.

Development
- ♦ Solaris O/S, Solaris 7 System Administration AnswerBook2 Documentation and the Solstice Backup 5.1 Server Edition are the only commercially licensed software used.
- ♦ There was no customization of the software.
- ♦ No IEEE or ANSI standards were used.
- ♦ Y2K compliance standards were followed. Sun/Solaris is Y2K compliant.

Performance
- ♦ The system responds to informational search queries in less than 10 seconds.
- ♦ The MySQL database was used.
- ♦ SAIC was not provided with the amount of disk space or memory that is required.
- ♦ The system does not access data from other systems.

d) Evaluation & Recommendations

Lessons Learned
Project Preparation
- ♦ Get the partners to buy off on the full project for both Phases I and II, this way there would avoid delays getting partner approval.
- ♦ Define the plan, so that everyone has a shared vision and could buy off on the plan.
- ♦ Do the research on the viability of the electronic tools currently in existence.
- ♦ Do not design the solution to the amount of money in the budget. Have technology plan and have the budget allocated to priority items in the plan.

Staffing
- ♦ Make sure that there are partner staff who understand that technology projects require good project management and scheduling. Otherwise, there the project would encounter delays, because staff won't understand the importance of meeting deadlines and making decisions in a timely manor.
- ♦ The people managing the project should have the authority to make decisions make the project happen and obtain commitments from top management.

Best Practices
Project Preparation
- ♦ Do not piecemeal the solutions together. Define future plans and get partners to buy off on the plan up front.
- ♦ Larry Chatmon, One-Stop Coordinator, recommended a feasibility study up front before implementation of a solution. This study would consider the agency's existing technology and where the agency would like their technology to be in the future. Also, the study would require technological expert analysis of the feasibility of the solutions proposed and cost to implement the solution.
- ♦ A detailed technology plan and vision should be developed that incorporates all phases to implement and realize the technological vision.
- ♦ It is important to get decision-makers and partners to sign off on the plan, before moving forward with implementation of the plan.

♦ It is helpful to consult technical experts first about all the tools and technology available, i.e. web technology, infrastructure and other tools.
♦ Concepts and vision from the partners should be considered first and then do the research on the technology.

Staffing

♦ A technology vision and plan should be developed.
♦ The technical people in the organization should drive the technical requirements for the solutions being considered.
♦ Commitment of the staff that would be tasked to implement and use the solutions is important to establish during the process.

Methodology & Procedure

♦ Focus groups of target users should be used to flesh out usability issues.
♦ Resources and processes need to be identified to ensure that the project would be successful.

Observations and Comments

The following observations were made during the site visit and interview:

Usability

♦ SF One-Stop consulted with Brock Allen regarding the POSIT principles during the initial design phases. This was helpful, because they were able to incorporate POSIT principles into the initial blueprint their website. Usability was designed into their website instead of being an afterthought.

Procurement

♦ The RFP process to procure a vendor to develop the website caused schedule delays especially for the second phase of development.

Partnership

♦ The SFPIC felt that getting partners' input and coming to consensus was difficult at times.
♦ It appears that the partners in SFOS have more difficulty working together than those in other SDA's.

Staffing

♦ In managing this project, the staff didn't use traditional IT project management tools; instead they developed project timelines. They did not seem to be familiar with traditional IT project management tools. Also, they did not have the time or the staff necessary to develop elaborate performance measures.
♦ There were two staff members that worked on the project primarily. They hired a technical firm, 415 Productions, to develop their website.
♦ The staff that worked on this project did not have the time to document the project activities and work with a lot of tracking tools. They worked on this project in addition to their One-Stop responsibilities.

Methodology & Procedure

♦ There was a lack of awareness of methodology or technical standards such as DOIT Project Management Policies, Quality Assurance Standards, IEEE, etc.

Implementation
♦ The SFPIC had planned to market the One-Stop San Francisco site when the site was operational. However, the implementation of the marketing plan has been delayed indefinitely.

Technology
♦ There was difficulty getting some of the specific network information. From the information provided, it appears that as long as the existing architecture is used, the system should be able to be implemented elsewhere. MySQL is a database that could be ported to other platforms. The Apache web server could be ported to Windows NT. PERL and HTML could work on other platforms in a web browser. It is undetermined how much extra work, if any, that it would take to move any of the above components to a different platform.

Recommendations
♦ This pilot is recommended for local replication. The second phase is presently under review and it is unknown as to whether or when it would proceed. San Francisco One-Stop planned to implement their Internet/Intranet in two phases. Their Internet site, San Francisco One-Stop Interactive (SFOSI), is fully operational. It is simple and easy to use. SFOSI would serve as a good template for other local One-Stops that may not have a website. It meets all the proper requirements. It has been developed with COTS software and has a high usability rating, which runs on a standard NT platform.
♦ This site appears to have relatively few usability problems:
   ♦ The text that people with poor reading skills might have difficulty understanding and potential problems with multiple windows.
   ♦ BOBBY 3.1.1 identified a single class of problems that need to be addressed in order to achieve BOBBY certification at "Priority 1 Accessibility Level." This was the lack of alternative text labels for graphics. These are pop-up text labels that serve as a text substitute for logos or other "pictures". Text-to-speech readers could read alternative text labels.
   ♦ The order of columns in the site map does not match the order of folder tabs on the main page. There does not appear to be any reason why the site map and the folder tabs do not match.

Next Steps
♦ Fix the usability issues. Consider lowering the reading level of the website and add alternative text labels for graphic labels.
♦ Document the San Francisco development process and incorporate the lessons learned and best practices stated above.
♦ Conduct a needs analysis in the local areas in which this website would be replicated. The analysis would consider the existing database, architecture and partner connectivity. This would serve as the blueprint for implementing the website in other areas.
♦ Incorporate local customization into the website in the development phase.
♦ Depending on the results of the needs analysis, a conversion plan may need to be developed to migrate to network platform (i.e. UNIX to NT) or relational databases (i.e. Access to Informix) or both.
♦ Train the systems administrator and staff how to use the system.
♦ Evaluate whether the local area should be maintained by a webmaster or hire a technical vendor to host and maintain the site.
♦ If there are any conversions or systems changes made based on any analysis, ensure that both the client and the server systems hardware requirements do not need to be changed. If nothing has been written as to these requirements, specify and document.

Appendix C 3

NOVA Connect! Kiosk

(3) NOVA Connect! Kiosk

a) Pilot Description

Purpose / Business Need

The Connect! One-Stop collaborative technology pilot project supports the development of a touch screen, multimedia and multilingual kiosk interface to enhance public access to electronic services. A critical link in the Connect! Information and Referral system, an easy-to-use kiosk, would offer interactive information on workforce and training resources as well as support services such as child care and housing in English, Spanish and Vietnamese. No computer skills would be necessary in order to access this directory of One-Stop services and the wealth of resource referral information. The kiosk system would include access to all the information contained in the Education and Training Services Directory described in the next section, as well as the content of the Connect! partners' website.

Solutions

To meet their objectives, NOVA Connect! developed business and technical solutions. The table below summarizes the solutions considered and the technology planned for implementing these solutions.

Purpose / Business Need	Solutions Considered	Technology Planned
Make information accessible in one space and get information to people that need it in order to avoid the run-around.	One-Stop model is to relocate agencies to a central location or to get all the information in one place via the Internet. However, the Internet was not enough; it is a good tool, but not a great tool. Most users need help accessing the Internet and there are not enough staff resources to facilitate this. Therefore the kiosk was a better option.	Kiosk with Internet access, touch screens, printers, telephone access for assistance, user-friendly tutorials and simple and easy functionality.
Choice of providing a place for people to get information versus taking the information to people.	Kiosk (Touch Media, Critical Mass) Vs Internet.	Kiosk – Critical Mass

Approach

They solicited input from various users in the form of user groups to identify key features and functionality for the kiosk. In addition, they reviewed a lot of kiosk products and vendors. Once they had reviewed all the vendors, they issued an RFP. There were six vendors that responded and they eliminated three vendors in the first round and then selected

a vendor from the remaining three. In the process of selecting a vendor, they did not want a "cookie cutter" solution. NOVA wanted a kiosk that was designed to fit their local needs. When the vendor was selected, they laid out a project plan, which resulted in a functional prototype. After the prototype was tested, necessary changes were made to the kiosk design and functionality. The new kiosk would be deployed in the designated locations.

b) **Support of One-Stop Philosophy**

Critical Success Factors
Evaluation Period – 11/01/99 to 1/31/00
One measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solutions implemented match with the critical success factors (CSF). The following table summarizes the degree to which the pilot project solutions aligned with the critical success factors. Columns A through G represent critical success factors defined in Section A of this report which could be answered with a yes or no. There are other factors H to J that could not be summarized in the table due the descriptive nature of the response required. Detailed descriptions of each CSF are addressed following the table.

Pilot	**System Implemented**	**Partner Connectivity**			**Client Accessibility**		**Maintainability of Technology**	
		A	B	C	D	E	F	G
Information & Referral Touch Screen Multilingual.	Kiosk.	N A	Y	Y	Y	Y	Y	Y

NA = Not Applicable

A. **Did the partners get connected?**
  Not Applicable.
B. **Was the equipment and software installed?**
  Yes, the prototype kiosk equipment and software was installed in the EDD office. Based on the feedback from the prototype, many changes have been incorporated in the physical design as well as in the functionality of the software.
C. **What is the level of operability?**
  The prototype is fully operational in the EDD office.
D. **Did the identified clients have increased accessibility to information and services?**
  Yes, accessibility has been increased. The target population was the answer seeker. The kiosk was designed to be a community resource.
E. **Did additional clients or staff get increased accessibility to information and services as a result of the pilot?**
  Yes, once the other ten new kiosks are deployed, clients would truly have increased accessibility to information and services.
F. **Will this solution be viable as it is today?**
  Yes, this solution is the most simple and generic of all the kiosks evaluated.
G. **Is it robust enough to allow for expansion?**

Yes, the server is on a Pentium III 450mhz, which is a server that could maintain ninety-six kiosks; currently, NOVA is only deploying nine kiosks. Most functions are automated, so one trained person could maintain the system locally.

H. What did or did not happen as planned and why?

Changes have been made to address the usability issues. Page by page printing could be done differently so that the paper does not jam.

I. What is the overhead to maintain it?

One person to maintain the system.

J. What worked best or what to avoid for future use?

In the development of the kiosk idea, functionality and features, the initial focus groups worked very well. The animated character, Ted, who provides user-support, is very effective. The usability users, the interface, the database structure and language specific for different cultures also worked very well. The RFP process for the kiosk was a two-tiered vendor review, which NOVA felt was very effective. Also, they reviewed a lot of vendor products that had canned, prepackaged solutions, and NOVA chose not to go with a "cookie cutter" solution.

Usability

Unlike the Long Beach WIN Kiosk and the Riverside EDA Kiosk, NOVA's prototype Connect! Kiosk uses generic graphics that are not tied to regional themes. Therefore, the thematic elements of Connect! could be adapted to other communities with little modification. However, some decision-makers and community members might find Connect!'s enthusiastic, high-energy animation and sound too pushy or risky. Further consideration of the value of the Connect! Kiosk might benefit from focus group testing with potential users as well as decision-makers. A particular issue to pursue is whether the high-energy graphics in this program would annoy or inconvenience routine and repeat users.

Sunnyvale NOVA *Connect!* Kiosk

Question	- Rating +									
	1	2	3	4	5	6	7	8	9	10
1. Is the interface intuitive?	✓	✓	✓	✓	✓					
2. How understandable is the application?	✓	✓	✓	✓	✓	✓				
3. How does the user perceive the program?	✓	✓	✓	✓	✓	✓	✓			
4. Is navigation simple and transparent?	✓	✓								
5. Does the application give the user sufficient feedback?	✓	✓	✓	✓	✓					
6. Do user control and freedom match the user's background?	✓	✓	✓	✓	✓	✓				
7. How easily can the user recover from mistakes?	✓	✓	✓	✓	✓	✓	✓			
8. Is the screen design appropriate?	✓	✓	✓	✓	✓	✓	✓			
9. Overall usability?	✓	✓	✓	✓						

General

1. Is the interface intuitive?

Many users would grasp the basic functionality of the interface rather quickly through experimentation and with the assistance of Connect!'s demonstration and help features.   However, the system responds in unexpected ways and is unresponsive under some conditions. For example, when a user interrupts the attract loop, the system demonstrates interface functions by highlighting each touch-sensitive area in turn. Yet, during and immediately after this demonstration, these same areas are unresponsive to touch, momentarily leaving some users with the impression that they do not work at all.

The kiosk reviewed is a prototype, which is not the final version. The housing for the Connect! Kiosk evaluated for this report would apparently be superceded by a more streamlined model.   Improvements in software functionality and interface design are also planned.

2. How understandable is the application?

The left panel of screen is constantly available and features clearly labeled controls for backing through pages, obtaining help and adding items to a list of bookmarked items for later print out. The primary display area starts with a scene-based menu, which leads through several layers of Connect! submenus that lead, in turn, to pass-through content from the Web as well as content unique to Connect!

After interrupting the attract loop, the user sees a cartoon character-an exclamation mark with an expressive face. He is seated at a desk surrounded by signs and other touch-sensitive areas. He orally lists, in a friendly and enthusiastic manner, the

functions and benefits of Connect! as the system highlights associated touch sensitive areas.

3. How does the user perceive the program?

Yes, the version evaluated is designed to accommodate standing users; access by wheel chair-bound users is likely to be somewhat problematical. Glare from ceiling lights resulting from the angled CRT screen is significant.

Connect! uses high-action, professionally rendered 3-D imagery with clever, attention-grabbing special effects and sounds. Pressing a button makes something happen: a sign twists or spins, a notice falls off a bulletin board. Connect! employs this type of animation through several levels of menu "drill down." The animation displays are bright and very clear. Connect!'s noisiness would make it unusable in many settings unless the sound is muted and/or users are provided with headphones. Convenience features include an option for printing information and a phone connection, which was inoperable in this particular kiosk.

4. Is navigation simple and transparent?

Connect! employs a simple "back" button to allow user to retrace steps. The system very clearly confirms user choices with special effects and headers for screen displays. CRT-based touch screens typically have a lower touch resolution than most mouse-based systems and users are particularly prone to errors of parallax due to the thick glass used in such screens. Touch screens often activate only when touched firmly. These factors make it difficult to activate small controls or small fragments of hypertext. Several design features related to these limitations effectively render the current prototype version of Connect! unusable for its primary function: web access. To activate World Wide Web hyperlinks, Connect! requires that a user tap the link twice at a fairly specific time interval; once is not enough.

The test subject for this study, a woman who uses computers and the Internet frequently, tried unsuccessfully to activate these hyperlinks more than a dozen times and spontaneously expressed frustration through sighs and moans. Rather than activate desired hyperlinks, her efforts often activated an I-beam cursor, which selected adjacent text. This appears to be a useless function since no edit or text copy functions are available to Connect! users.

The double-tap requirement is inconsistent with Connect! control buttons which respond correctly only to a single click and may toggle between functions if double-clicked. A number of relatively simple approaches to redesign might address these problems. These include changing the kiosk operating system's default settings for taps (i.e. single vs. double clicks) and increase the font size.

The test subject also found it somewhat difficult to operate the scroll bar. Although this is a standard feature of the Windows operating system used to deliver Connect!, this implementation places it very close to the frame of the CRT monitor. Coupled

with the touch resolution problems described above, this placement contributes to awkwardness of manipulation.

5. Does the application give the user sufficient feedback?

Yes. Connect! beeps quietly whenever the user touches the screen firmly. Although this may reassure users that their touch has been acknowledged, it also could cause confusion because other control elements also acknowledge touches with various sounds. Thus, users who touch an insensitive area of the screen may assume that they have, in fact, issued a command and that this command has been acknowledged.

As noted earlier, Connect! uses animation effects to acknowledge user requests but these effects often take a second or two, much longer than a simple button highlight. Once the novelty has worn off, some users are likely to find these effects tiresome and time consuming.

The left panel (constantly available) includes a device for storing items, such as job and education listings, that are passed through from websites and from other databases. Unfortunately, the window that displays the book marked items took several seconds to update, confusing the test subject.

6. Do user control and freedom match the user's background?

The reactions of users to the high-energy displays used in Connect! would vary by age group and culture, but many casual users would find the effects appealing. The interface is clearly designed to be "cute," "cool," and "friendly". A touch-sensitive sign in the opening scenario-screen allows users to switch between English, Spanish and Vietnamese. Activating the non-English versions changes all text labels for graphics elements and controls but not Internet pass-through content.

7. How easily can the user recover from mistakes?

Using the "back" button could easily reverse many typical mistakes.

8. Is the screen design appropriate?

Screen layouts are lively, attractive and well laid out. However, as much as 20% of every screen is devoted to a large banner presenting the Connect! logo, which is also physically emblazoned on the kiosk housing. Reducing the size of the banner, at least on screens other than the main screen, would free up space and permit a larger window for variable content.

9. What is the overall usability?

The version of the Connect! Kiosk examined for this report is marginally usable but could be easily improved with minor modifications.

c) **Technology Replication**

NOVA Connect! Kiosk Technology Rating

Feature	− Rating +
	1 2 3 4 5 6 7 8 9 10
Capability	✓ ✓ ✓ ✓ ✓
Maintainability	✓ ✓ ✓ ✓ ✓ ✓
Scalability	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Cost	✓ ✓ ✓ ✓ ✓ ✓
Complexity	✓ ✓ ✓ ✓ ✓ ✓ ✓
Architecture	✓ ✓ ✓ ✓ ✓ ✓ ✓
Development Environment	✓ ✓ ✓ ✓ ✓ ✓
Performance	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Overall Technology Rating	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

Capability
♦ It was unclear if the NOVA Connect! Kiosk has met the development requirement due to lack of response on the survey.
♦ There was also no response to the uptime question on the survey, so no determination could be made.

Maintainability
♦ Per workstation maintenance costs are possible and may vary around $1,200.
♦ One-Stop staff could maintain the system.
♦ No additional staff training would be required for maintenance staff, but if modifications (changes/adds/deletes) to the existing web application were required, some training would be required.
♦ Automated tools are available to enhance application maintenance by the staff
♦ Some remote maintenance is possible: All software could be maintained off-site and uploaded; hardware maintenance must be done on-site.
♦ If maintenance staff determines that hardware has failed, outside service would be required.
♦ Version upgrades are planned. The database is dynamic; look/feel is waiting on customer feedback.
♦ As stated above, software (web application) upgrades are done off-line and require relatively minimal effort; no "upgrade packs" would need to be sent out as the application is managed on a server.

Scalability
♦ It appears from the information provided that the system is scalable, assuming funding was provided to do so.

♦ As for limits on the application, theoretically, there are broad limits, but the staff estimates that fifty to one hundred kiosks would be about the limit for this system without requiring an upgrade in server-side systems support.

♦ The database is expandable to 2GB record size and, as with most applications, total data limits are based on available hardware resources (when the disk is full).

♦ The design of this system lends itself to replication on an expanded basis as much of the initial design could be carried over to other systems with minimal changes. Site/language specific changes would be the only major changes required.

♦ It is an Internet-based system, TCP/IP communications are used.

♦ Although accessible to persons with disabilities, it was not designed specifically to meet their needs.

Cost to Implement

♦ The survey indicated that no licenses are required to operate the system, but it may be that server-side issues were not thought through. As the system is kiosk based and is setup to connect to a web page, the only basic license would be that of a standard PC which would be at the heart of the kiosk and is usually included in the purchase of a system.

♦ There is no per workstation license.

♦ There is no per user license required for any software.

♦ The system requires a special touch screen monitor and software.

♦ Training on PC basics: Keyboard navigation and the Internet would likely suffice; most young persons today have these minimal skills.

♦ Information and Referral Staff will be trained to answer customers' inquiries on education and training resources. Career and guidance counselors will be trained in using the Directory to meet their client's education and training needs. The Learning Network Consortium and the Connect! will create a Technology Institute, that would train partner agencies' staff to develop and upgrade the website.

♦ Some COTS software was used in the development of the system.

♦ No data conversion was required.

♦ The entire application was a custom project.

♦ No new staff was hired.

Complexity

♦ The third-party products required to operate the system are as follows: Internet Explorer 4.0, The Kiosk executable, ELO Touch Screen Software and PERL.

♦ Four products were integrated: System, Touch Screen, Motion Sensor and Printer.

♦ No middleware products were used, which minimizes the complexity of this solution.

♦ There are no special skills required to operate the system.

♦ Data storage is not required for each user.

♦ There is a central database.

Architecture
♦ The hardware implemented on the server end is a PC-based platform running a Pentium III class processor at 450mhz.
♦ The kiosk system hardware is a PC-based Win 95/98 Workstation (specifications unknown).
♦ Server software is *assumed* to be Microsoft BackOffice, but it was not stated in the survey.
♦ The workstations require web browser and touch screen software.
♦ TCP/IP communications via either a dedicated or dial-on-demand link are required.
♦ The security is based on the use of SSL (Secure Socket Layer).
♦ There is e-mail capability.
♦ The development and implementation configurations are the same.

Development
♦ Some COTS software was used in development, including PERL back-end and Director Graphics (see above).
♦ This is a completely custom application.
♦ To use this application for other sites, database content and some graphic elements would have to be changed and/or replaced.
♦ No IEEE or ANSI standards were used.
♦ Y2K compliance standards were not followed.

Performance
♦ The system responds to informational search queries in less than 10 seconds.
♦ No actual estimate was provided as to disk space requirements. If needed, disk capacity is a simple upgrade.
♦ RAM requirements: 32MB for the kiosk and 64MB for the server to operate the kiosk.
♦ Server platform requirement: able to run NT Server.
♦ Workstation platform requirement: able to run WIN95/98.
♦ The PERL relational database was used.
♦ The system does not access data from other systems.

d) Evaluation & Recommendations

Lessons Learned
Methodology & Procedure
♦ The focus groups worked especially the multilingual sections.

Kiosk
♦ It has been difficult to manage the need for multilingual staff and the need for someone to be available to answer the phone during all business hours without being able to anticipate the flow of calls on any given day.
♦ The long-term management of the kiosk (i.e. "sales" of kiosks to partners and/or other entities) and on-going maintenance agreements should be thought through very thoroughly at the beginning of the project. NOVA, historically has not been in the sales and maintenance business. However, now it is a necessary (and undesirable) function for them to assume.

Best Practices
Procurement
♦ NOVA felt that that RFP process served them very well. After soliciting and receiving bids, they invited all bidders to present their concept (visually and verbally) to the Review Committee. These presentations allowed NOVA to get an in-depth idea of the creativity, personality and capabilities of the vendors.

Observations and Comments
Procurement
♦ Other vendors considered were Critical Mass and High Technology Solutions (HTS).
♦ Look into the pros and cons of kiosk systems, including the on-going support, maintenance and updating necessary to keep them effective. Even though the design function was contracted out, the kiosk project has been, and continues to be, very labor intensive.

Technology
♦ Some specific network information was unavailable for review. From the information provided, it appears that as long as the existing architecture is used, the system could be replicated with a reasonable amount of re-engineering required to adjust the site or language specific portions of the system. The touch screen software may be platform dependent, but other screens could likely be found for different platforms. PERL and HTML could work on other platforms in a web browser. It is undetermined how much extra work, if any, it would take to move any of the above components to a different platform.
♦ NOVA considered alternate ways of providing support to individuals using the kiosk rather than the phone line.

Recommendations

♦ This pilot is recommended for local replication. NOVA Connect! Kiosk has an operational prototype kiosk in a local EDD job service office. They have ordered ten more kiosks for deployment. They have made the necessary changes to the physical and functional features of the kiosk. This kiosk is the most simple and generic of the three kiosk pilots.

♦ There are a few usability issues that need to be modified and changed to increase usability of the kiosk. The following items would have to be corrected:

  ♦ When a user interrupts the attract loop, the system demonstrates interface functions by highlighting each touch-sensitive area in turn. Yet, during and immediately after this demonstration, these same areas are unresponsive to touch, momentarily leaving some users with the impression that they do not work at all.

  ♦ As it is designed to accommodate standing users, access by wheel chair-bound users is likely to be a problem.

  ♦ Glare from ceiling lights resulting from the angled CRT screen is significant.

  ♦ Connect!'s noisiness would make it unusable in many settings, unless the sound is muted and/or users are provided with headphones.

  ♦ CRT-based touch screens typically have a lower touch resolution than most mouse-based systems and users are particularly prone to errors of parallax due to the thick glass used in such screens.

  ♦ Touch screens often activate only when touched firmly. These factors make it difficult to activate small controls or small fragments of hypertext.

  ♦ The double-tap requirement is inconsistent with Connect! control buttons which respond correctly only to a single click and may toggle between functions if double-clicked.

  ♦ The test subject also found it somewhat difficult to operate the scroll bar. Although this is a standard feature of the Windows operating system used to deliver Connect!, this implementation places it very close to the frame of the CRT monitor.

Next Steps

♦ Make sure the new kiosk has incorporated the usability modifications and technical fixes stated previously.

♦ The new kiosk should be re-tested after the fixes and modifications have been made.

♦ A manual should be created that documents the kiosk development, procurement and implementation process.

♦ Conduct a site-survey on locations where the kiosk would be installed.

♦ A needs analysis would have to be conducted, taking into consideration database, network architecture, local customizations and staff training.

♦ Make sure all agreements and memorandums of understanding (MOUs) are in place with the site at which the kiosk is being installed.

♦ Make sure the staff is properly trained how to maintain the kiosk at each location.

♦ Once the final solution is set, review and document software, hardware, client-server and network equipment requirements.

Appendix C 4

NOVA Learnet

(4) NOVA Learnet

a) Pilot Description

Purpose / Business Need

The purpose for this education and training directory project is to continue developing software and web links for the Santa Clara County Education and Training Services Directory (Learnet). The software needs to be enhanced by creating additional listings for soft skills training. The directory's interface needs to be upgraded to improve its usability and aesthetic appeal by adhering to POSIT guidelines. A website template would enable training providers to have their own home pages. Finally, since public awareness of the Training Directory is limited, some funds would be requested for marketing and dissemination of information to other One-Stop area.

Solutions

To meet their objectives, NOVA Learnet developed business and technical solutions. The table below summarizes the solutions considered and the technology planned for implementing these solutions.

Purpose / Business Need	Solutions Considered	Technology Planned
Currently, limited offerings of only hard skills training. Research shows demand for soft skills.	Expand database to list soft skills training.	Modify Fourth Dimension tables and data element to list soft skills training.
Learning Network members have not yet developed a website.	Create a usable, accessible website template that any Learning Network member or training provider could use as their basic home page.	Create a template HTML home page for training providers to use.
The directory needs some design improvements to make it easier to use and navigate.	Use principles of usability outlined in POSIT handbook to upgrade usability of the directory.	Modify existing HTML code on the Learning Network website to incorporate usability principles.
The directory needs performance data such as the data mandated by Senate Bill SB645.	Build the necessary modifications that would allow users of the directory to view performance reports on providers when SB645 data is mandated.	Performance data is pending implementation, due to the delay in California Senate Bill 645 regarding training provider "report cards."
Enable users to search database by course level information.	Modify directory to allow searches on course information.	Modify Fourth Dimension tables and data elements to store and display course level information.
Need for a training manual for the Learning Network Directory.	Develop a manual to assist One-Stop staff in adapting the Education and Learning Service Network Directory to their own specifications.	A user-friendly tutorial has been created but not yet implemented.

Approach

The approach was to find out what directory enhancements were necessary by surveying Learning Network members and training providers. As a result of the survey, the following enhancements to the directory were suggested:

♦ Additional listings for soft skills training.
♦ The directory's interface needs to be upgraded to improve its usability.
♦ A website template would be created to enable training providers to have their own home page.
♦ Modify the directory to view performance data on training providers when SB645 data becomes available.
♦ Modify the directory for all users to search the database by course level information.
♦ Implement a training manual.

NOVA planned to train one of their project staff on the Fourth Dimension database language so that directory could be maintained locally. Once the design for each enhancement is finished, the staff could begin making the enhancements to the Learning Network code.

They utilized focus groups for the various functional areas and consulted the POSIT guidelines for usability issues.

b) **Support of One-Stop Philosophy**

Critical Success Factors
Evaluation Period – 11/01/99 to 1/31/00
One measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solutions implemented match with the critical success factors (CSF). The following table summarizes the degree to which the pilot project solutions aligned with the critical success factors. Columns A through G represent critical success factors defined in Section A of this report which could be answered with a yes or no. There are other factors H to J that could not be summarized in the table due the descriptive nature of the response required. Detailed descriptions of each CSF are addressed following the table.

Pilot	System Implemented	Partner Connectivity			Client Accessibility		Maintainability of Technology	
		A	B	C	D	E	F	G
Soft Skills Training	Changes were made.	NA	Y	Y	Y	Y	Y	Y
Website Template	Changes were made.	NA	Y	Y	Y	Y	Y	Y
Usability Upgrade	Changes were made.	NA	Y	Y	Y	Y	Y	Y
Performance Data	Pending state board approval.	NA	Y	N	N	N	N	N
Course Level Data	The capacity for course level data was created.	NA	Y	N	N	Y	Y	Y
Replication Manual	Not implemented yet	NA	N	N	N	N	N	N

Not Applicable

A. Did the partners get connected?

Not Applicable.

B. Was the equipment and software installed?

Yes, the new Learnet software was installed. It includes a template for training providers to use as their basic website. The POSIT usability principles are incorporated into the website for enhanced navigation. The database was modified to store course level information. The providers have not yet loaded the course level information. Performance information has been delayed until the State Workforce Investment Board provides direction to the PBA committee on the implementation of SB645. A decision is expected soon and this feature should be functional by July 1, 2000.

C. What is the level of operability?

Yes, the Learnet site is fully operational. However, the help screens and the tutorial are under construction. The Frequently Asked Questions (FAQ's) are accessible. No course level information is currently loaded in the database, but the capacity exists.

D. Did the identified clients have increased accessibility to information and services?

Yes, training seekers increased accessibility to the information and services, as the site was easier to navigate and included additional access to soft skills training.

E. Did additional clients or staff get increased accessibility to information and services as a result of the pilot?

Staff of training providers increased their accessibility to information and services on Learnet, because they have been provided with user-friendly templates to enter training data for their programs.

F. Will this solution be viable as it is today?

Yes, the solution is viable and additional capacity has been provided to expand certain components of this module.

G. Is it robust enough to allow for expansion?

Yes, the kiosk is using Fourth Dimension. Fourth Dimension works in a distributed environment. The maximum number of users on Learnet is fifty. The database could be redesigned to scale up to several thousand, if that level of current users was anticipated

H. What did or did not happen as planned and why?

The coding of the software was done in Fourth Dimension. Staff had to be trained to program the directory in Fourth Dimension Database language and could not get up to speed in time to program the database modifications. Another programmer was brought in to program the database. The amount of time that was required to train new staff on the code was not feasible given the time allotted to complete the project. ? The programmer that was working on the Help and Tutorial section has taken a job in the private sector. Another programmer has been assigned to complete this section. They expect the Help/Tutorial section and other enhancements to the site (including integration of the State Performance requirements) to be functional prior to July 1, 2000.

I. What is the overhead to maintain it?

The website is low maintenance. Back-ups are automated.

J. What worked best or what to avoid for future use?

Getting input from the training providers about how they would us this system. The number of hits to the Learnet website has increased, however it could not be directly attributed to the changes they made.

Usability

While this website addresses an obvious community need, it is still under development. The core function is to support searches of education and training courses, programs and providers. However, the search functions are divided up in such a way that many users could miss much of the information that might benefit them. Navigation functions and screen design would benefit from some redesign.

Learnet: http://www.novapic.org/Directory/sctraining.HTML

Question	-				Rating				+	
	1	2	3	4	5	6	7	8	9	10
1. Is the interface intuitive?	✔	✔	✔	✔						
2. How understandable is the application?	✔	✔	✔	✔						
3. How does the user perceive the program?	✔	✔	✔	✔						
4. Is navigation simple and transparent?	✔	✔	✔							
5. Does the application give the user sufficient feedback?	✔	✔	✔	✔	✔	✔				
6. Do user control and freedom match the user's background?	✔	✔	✔	✔	✔	✔				
7. How easily can the user recover from mistakes?	✔	✔	✔	✔	✔	✔				
8. Is the screen design appropriate?	✔	✔	✔	✔	✔					
9. What is the overall usability?	✔	✔	✔	✔						

General

1. Is the interface intuitive?

The Learnet interface provides access to training and education opportunities including courses, classes, workshops and the like. The interface design is fairly conventional, with a continuously available menu panel on the left side populated by labeled buttons. Most browser-savvy users would encounter few problems understanding and using the most basic aspects of this program. However, the search functions, which are the core of the website, would be hard for many people to use properly. The program is still under development and contains several sections that are non-functional. These contain appropriate notices to this effect.

2. How understandable is the application?

Most first-time users would find the home page fairly mysterious since it does not indicate the site's purpose and since it is not immediately clear what the user should do. The home page consists of a picture with three stacks of books and several open books. Labels rather loosely associated with the books read "Add

Data/Modify Data," "Search" and "Information." A header box in the upper left corner, labeled "Santa Clara Learning Network," looks like a button. However, it is non-responsive. The page would take about seventeen seconds to download on a 28.8 modem. This is time that would be better spent if the user went directly to the site's information or search pages.

3. How does the user perceive the program?

Once users get to the information page, they could access buttons on a vertical menu panel on the left side of the page. However, the information page itself is wordy and the user has to scroll down to the bottom of the page to get to additional links. Many users would appreciate a page that starts with an outline of the site's functions and benefits rather than a review of history and governance.

4. Is navigation simple and transparent?

The basic structure of the program would be fairly easy to navigate. Clearly labeled buttons link users to six major sections. But the heart of Learnet's functions lie in its search capabilities and these need to be more prominent and more effectively coordinated. Currently, the picture-links to the three major search functions barely peak up from the bottom of a browser on a 600X800-pixel monitor display; labels would not be visible.

The metaphors represented by these pictures are not obvious. For example, one book and one apple represent "Courses," while three books and one apple represent "Programs." Clicking on one of these pictures takes the reader to a particular type of search. Since other levels of the program use labeled buttons for links, this page would benefit from consistency if it also used buttons.

Selecting the "Courses" picture takes the user to a form through which they could search the Learnet database. But, there is no obvious way to search by the other two criteria, programs and providers, without clicking the search button on the menu panel and then going to the bottom of the main search page. Many users would find this very counter-intuitive since, at this point, they are already looking at a page header which reads "Search Courses." This is a potentially serious usability problem because many users are likely to forget or not realize that the results they obtain from searches represent a very limited subset of information available in the database.

5. Does the application give the user sufficient feedback?

Aside from button and icon links to pages, there is not much feedback, although it is not particularly important to the purposes of this site. Users could set several search criteria using a combination of buttons and fill-in forms. Results are displayed as tables containing basic descriptive information about courses, programs or providers, depending on the subsection of the website in which the user is located. These tables, in turn, contain links to pages with additional information for each item.

6. **Do user control and freedom match the user's background?**

No, because the search function is divided into separate pages (eight pages in all), a user would have to understand the logical structure of the search criteria fairly well to conduct a thorough search. The readability for the information page (Flesch-Kincaid formula) is twelfth grade equivalent, which may be hard to read for many people who have not graduated from high school or who use English as a second language. Other pages were not evaluated in this regard. Readers of languages other than English could understand much of the information in the database proper (such as addresses). A future version of this website, which provided information in languages other than English, would be beneficial.

The menu panel does benefit from use of "alternative text labels" supplied for buttons. Some other graphics, such as the page headers, pictures and some buttons do not have alternative labels. However, the site seems within reach of BOBBY Priority 1 approval which means that none of the pages have accessibility errors.

7. **How easily can the user recover from mistakes?**

Users could recover from navigation errors by using the browser's back page function. Because the database was only partially populated with information at the time of this review, database functions were not inspected in detail.

8. **Is the screen design appropriate?**

The site works fairly well on 640x480 pixel displays, but some buttons on the main menu panel could not be seen without scrolling, a problem that could be corrected by moving the buttons to the top of the menu panel. Larger monitors (800x600 pixel displays and larger) pose no problem. Screen design is conventional and makes good use of white space. The site uses HTML frames, which could cause problems for users with older browsers.

Use of buttons and icon-like pictures is inconsistent. Button-like headers are used throughout but are non-functional. In some sections, the designers employ "inverse" white buttons with labels that are too small. "Inverse" buttons are generally reserved for animating regular buttons, which gives the appearance that a button has been pressed down when clicked. Inverse buttons are generally not used alone.

9. **What is the overall usability?**

Fair. The site is still being developed and would benefit from the services of a usability consultant. The most crucial functions to address in a redesign are the search functions, which would benefit from consolidation and/or better coordination.

c) **Technology Replication**

NOVA Learnet Technology Rating

Feature	- Rating +									
	1	2	3	4	5	6	7	8	9	10
Capability	✓	✓	✓	✓	✓	✓	✓			
Maintainability	✓	✓	✓	✓	✓					
Scalability	✓	✓	✓	✓	✓	✓	✓			
Cost	✓	✓	✓	✓	✓					
Complexity	✓	✓	✓	✓	✓	✓				
Architecture	✓	✓	✓	✓						
Development Environment	✓	✓	✓	✓	✓					
Performance	✓	✓	✓	✓	✓	✓	✓			
Overall Technology Rating	✓	✓	✓	✓	✓	✓				

Capability
♦ There was no infrastructure increase requested.
♦ The average uptime is 99.9%, 7 days a week 24 hours a day.

Maintainability
♦ Since the entire system is web-based, there is no per workstation maintenance required.
♦ One-Stop staff could maintain the system.
♦ Training is required on the Fourth Dimension Database language.
♦ There are no automated tools.
♦ There is currently no remote maintenance, but revisions are planned to allow for remote editing by training providers.
♦ No outside service is required.
♦ Version upgrades are planned for remote editing and enhancements to the user interface are expected.
♦ Programming changes to the database are necessary in the upgrade.

Scalability
♦ The maximum limits to the system are too high to be a problem.
♦ The database is expandable, both internally and externally.
♦ The Education and Training Services Directory is designed to be replicable on a statewide level. Its roots are in the state's Learning Network Initiative, which originally aimed to create a model directory and on-line information system for local areas.
♦ The system uses TCP/IP and is web-based.

Cost to Implement
♦ There are no per workstation license agreements.
♦ There is no per user license agreement.
♦ The software requires Internet access.
♦ There are no requirements for extended memory.
♦ Familiarity with the Internet is required training for users.
♦ Technical staff should know Fourth Dimension Database programming and web development, including HTML and SQL.
♦ Limited testing was performed throughout the development phase, which minimize costs. Functionality, navigational and user testing were performed during the development phase of the kiosk. The findings from this phase were incorporated into the production units.
♦ A data conversion was needed to move data from one project database to the current project database, which took several hours.
♦ Negligible customization was required.
♦ No new staff was hired.

Complexity
♦ The third-party products required for use are the Fourth Dimension Database and Internet browsers.
♦ No products were integrated and no middleware was required. Nothing was interfaced.
♦ No special skills are required to operate the system except Internet familiarity.
♦ No data storage is required for each user.
♦ The central database is located at the NOVA Industry Council, which minimizes the complexity of this solution.

Architecture
♦ A G3 Mac web server was implemented for 50 concurrent users.
♦ A web-based front end was implemented.
♦ TCP/IP is required.
♦ HTTP 401 security messages are in place.
♦ There is no firewall installed.
♦ The system has e-mail capability.

Development
♦ The off-the-shelf product used was the Fourth Dimension Database application.
♦ The staff customized the database application.
♦ The custom development was not for a specific location.
♦ No IEEE or ANSI standards were used.
♦ The DOIT method was not used to determine Y2K compliance.

Performance
- ♦ Most informational search queries take less than 10 seconds, although query speed is dependent upon user's hardware.
- ♦ 4 megabytes of memory is needed however 16MB are recommended for efficient performance.
- ♦ No specific platform is required.
- ♦ The Fourth Generation Database application was used as the relational database improves performance.
- ♦ The system does not access data from other systems, which would help performance.

d) Evaluation & Recommendations

Lessons Learned
Staffing
- ♦ The primary reason that the project fell behind schedule was the amount of time required to train staff members in Fourth Dimension Database programming. In retrospect, the training should have begun earlier. Unfortunately, it took a while to determine which database application was best suited for the needs of the project and had the greatest capacity for expansion. Once the appropriate application was determined, there were delays in acquiring the necessary training from the database company.

Methodology & Procedure
- ♦ When a project heavily involves technology, even the most conservative timeline is going to be underestimated by a considerable margin. This project's timeline, which seemed reasonable, was proven to be unrealistic. And, when every phase of the project's timeline is underestimated, it is nearly impossible to get the project back on track.

Best Practices
- ♦ Develop a good working partnership with the different partner agencies that fosters collaboration, linkages and synergy.

Observations and Comments
Partnership
- ♦ The cooperation amongst the various partners in the Learning Network project has been consistently impressive. It was refreshing to observe the ability of the partners to allocate time to meet and work on the project. Consequently, when the partners came together, they were very productive. The collaborative process was envisioned and created and has resulted in a high quality product that has been readily accepted.

Implementation
- ♦ Fortunately, most of the work on this project has been done. There would be very little effort required to replicate the Learning Network, because very little programming would be needed. It would be simply a matter of purchasing the hardware, copying the database structure, tweaking the user-interface and training the new users. This is a product that would be considered valuable by any potential user.
- ♦ From NOVA's perspective, they did not complete the replication manual because there is really no need to replicate the programming in order to use the system. Any area that wanted to use the system could contact them to get access rights and enter their info into

the system. NOVA could easily put in an interface to allow just their information to be seen, or to view the entire database.

♦ If the need arises, NOVA could either complete the replication manual or offer training assistance to other agencies wishing to replicate the system. The directory is programmed to accept soft skills. Not many training providers in the NOVA area offer soft skills as a stand-alone function. Rather, they are integrated into the curriculum of their other courses. Thus, the population of this database is evolving as they figure out how to incorporate these skills. NOVA solicited information both on-line and by mail for entry into the database (both public/non-profit and private.

♦ While the Learnet Project is complete, they are waiting for the California State Work Investment Board to make a decision on training provider performance regarding California SB645. This performance data would be presented in the form of a training provider report card. Once a decision is made, the appropriate data would be entered into the Learnet System. A decision is expected soon and this feature should be functional by July 1, 2000.

Staffing

♦ The programmer that was working on the Help and Tutorial section has taken a job in the private sector. Another programmer has been assigned to complete this section. They expect the Help/Tutorial section and other enhancements to the site (including integration of the State Performance requirements) to be functional prior to July 1,2000.

Technology

♦ Though the database has been modified to store and display course level information, none has been entered. The providers surveyed did not want to maintain the course level data. The Learnet Directory has a graphical user interface with user-friendly look and feel. The user-friendly tutorial has been created but not implemented.

Recommendations

♦ This project is recommended for local replication. NOVA Learnet is a web-based Education and Learning Network Training Services Directory that runs on a Mac network. It is functional and has the capacity to record data for the different programs and providers. The Help/Tutorial section and other the site enhancements (including integration of the State Performance requirements) enhancements are expected to be functional prior to July 1, 2000. Fourth Dimension Database language is not one of the common database engines.

♦ There may be a few concerns converting the Mac application and data to the PC platform. These should be addressed with the vendor. Most multiple platform vendors already have conversion routines in place.

♦ Ensure that the collaboration of agencies necessary to making these services available in their region share a common purpose.

♦ There are a few usability issues that need to be modified and changed to increase usability of the kiosk. The following items would have to be corrected:

  ♦ The search functions, which are the core of the website, would be hard for many people to use properly.

  ♦ Most first-time users would find the home page fairly mysterious, since it does not indicate the site's purpose and it is not immediately clear what the user should do.

♦ The information page is wordy and the user has to scroll down to the bottom of the page to get to additional links. Many users would appreciate a page that starts with an outline of the site's functions and benefits rather than a review of history and governance.

♦ The heart of Learnet's functions lie in its search capabilities and these need to be more prominent and more effectively coordinated.

♦ The metaphors represented by the pictures are not obvious.

♦ Selecting the "Courses" picture takes the user to a form through which they could search the Learnet database. There is no obvious way to search by the programs and providers criteria without clicking the search button on the menu panel and then going to the bottom of the main search page. Many users would find this very counter-intuitive since, at this point, they are already looking at a page header which reads "Search Courses."

♦ Some other graphics, such as the page headers, pictures and some buttons do not have alternative labels. However, the site seems within reach of BOBBY Priority 1 approval.

Next Steps

♦ Incorporate the Help/Tutorial section and add the performance information before replication begins in other locations.

♦ Review the usability issues and make the appropriate changes.

♦ Conduct a needs analysis for the local areas in which this website would be replicated. The analysis should consider the existing database, architecture and partner connectivity. This would serve as the blueprint for implementing the Learnet in other locations.

♦ Document the NOVA Learnet development, procurement and implementation process and include the lessons learned and best practices stated above.

♦ Local customization to the website would have to be incorporated into the development phase.

♦ Develop a conversion plan to move the existing database and network architecture to one of the more common relational databases and network architectures.

♦ Training for systems administrator and staff would need to be developed.

♦ A decision needs to be made whether to host and maintain the Learnet site internally or contract out for these services.

♦ Once the final solution is set, review and document the client, server and network equipment requirements.

Appendix C 5

Riverside EDA Kiosk

(5) Riverside EDA Kiosk

a) Pilot Description

Purpose / Business Need

The multimedia Information Kiosks provide job seeker, educational information, community resources and a variety of additional services, including Internet access and e-mail capabilities. These would be housed at each Workforce Development Center (WDC). These systems would be linked to the Internet and customers accessing this network could utilize self-directed job search activities. These activities include access to job listings and employment development information. A system of forty touch screen kiosks was created to provide convenient information regarding available vocational and skills training courses which could lead to improved employment opportunities. Access to the Internet, job search websites, resume creation capabilities, scanners for sending resumes, telephone connections to service providers and free e-mail are available through the kiosk.

Solutions

To meet their objectives, Riverside EDA developed business and technical solutions. The table below summarizes the solutions considered and the technology planned for implementing these solutions.

Purpose / Business Need	Solutions Considered	Technology Planned
The Riverside County EDA needed an efficient way to inform residents about education and career training that could enhance their employment opportunities. Also, an automated way to register and track clients.	Kiosk, websites, accounts and a magnetic card strip reader.	Must be on a secure, name-brand operating system that supports multiple databases, provide Internet connectivity and browser functionality along with browser control at a domain level, provide full screen video, if necessary, allow for rich multimedia/images and have a web enabled monitoring tool. Content must be remotely updateable to include kiosk's software.

Approach

The plan was to install forty kiosks throughout Riverside County. The Riverside County EDA issued an RFP to select a kiosk vendor. Once the vendor was selected, the kiosk development began and the installation schedule followed afterward. Once the vendor was

procured, a detailed project schedule was planned with deadlines and milestones. Kiosks were placed in local libraries, shopping malls and other public places convenient to likely candidates. This function-rich kiosk solution even permits the EDA to simultaneously pre-screen candidates while they are using the system.

b) **Support of the One-Stop Philosophy**

Critical Success Factors
Evaluation Period – 11/12/99 to 1/31/00
One measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solutions implemented match with the critical success factors (CSF). The following table summarizes the degree to which the pilot project solutions aligned with the critical success factors. Columns A through G represent critical success factors defined in Section A of this report which could be answered with a yes or no. There are other factors H to J that could not be summarized in the table due the descriptive nature of the response required. Detailed descriptions of each CSF are addressed following the table.

Pilot	**System Implemented**	**Partner Connectivity**			**Client Accessibility**		**Maintainability of Technology**	
		A	**B**	**C**	**D**	**E**	**F**	**G**
Multimedia Kiosk Network	36 kiosks installed, 4 more planned with additional 2 in the works.	N A	Y	Y	Y	Y	Y	Y

NA=Not Applicable

A. **Did the partners get connected?**
   NA=Not Applicable
B. **Was the equipment and software installed?**
   Yes, the kiosk has been in the field for almost a year (April 1999). The plan is to implement forty kiosks and thirty-six have been installed.
C. **What is the level of operability?**
   The kiosks are fully functional. There has been additional follow-on work. They are finishing up the scanner component to work with OCR software. Basic scan/fax functionality is incorporated. They have over 14,000 database records.
D. **Did the identified clients have increased accessibility to information and services?**
   Yes, these kiosk units are functioning throughout Riverside County. From tracking kiosk information, the top service categories are accessed over 5000 hits/per month to including phone, web, job search, "where do I find" and printing usage.
E. **Did additional clients or staff get increased accessibility to information and services as a result of the pilot?**
   Yes, as result of the kiosk project, additional clients in need of information and services received increased accessibility in areas where physical centers don't exist.
F. **Will this solution be viable as it is today?**
   Yes, the kiosk solution is viable.

G. Is it robust enough to allow for expansion?

Yes.

H. What did or did not happen as planned and why?

An unexpected glitch with incorporating scans into OCR software because of a black border. This could be fixed by using higher quality software or placing white tape on kiosk. The fix is going to be implemented in the next few weeks.

I. What is the overhead to maintain it?

They currently have about five full-time staff members to organize all 14,000 records and promote advertising and usage.

J. What worked best or what to avoid for future use?

The project has worked well, because it is truly servicing the community and it saves people time. People have a greater exposure to county services. What did not work was the agency's inexperience with implementing this solution. This was due to the lack of experienced staff with information technology project management expertise, which resulted in unrealistic timelines. The project needs to do a better job beta testing the software.

Usability

This kiosk represents a much more complex and comprehensive approach to public information services than either the Long Beach WIN or NOVA Connect! Kiosks. The scope of this review is insufficient to cover all potential usability issues. Additional usability reviews and some usability testing could contribute significantly to any upgrade or redesign. Like the Long Beach kiosk, screen backgrounds on the EDA kiosk are keyed to regional themes, but they could probably be replaced at relatively low cost.

Although potential users who are specifically directed to access EDA services would most likely find their way to the EDA main page, casual passersby might be less likely to access the system. Since it involves "front-end" access issues; further assessment of the advertising loop could be worthwhile and could be pursued through simple field observations and interviews with casual passersby. This would be supplemented by focus groups. Addressing issues posed by the attract-loop advertising probably involves political and financial considerations, which are beyond the scope of this usability review. However, a number of alternative design solutions might make access more practical while preserving viable options for advertising.

Riverside EDA Kiosk

Question	− Rating +
	1 2 3 4 5 6 7 8 9 10
1. Is the interface intuitive?	✓ ✓ ✓ ✓ ✓ ✓ ✓
2. How understandable is the application?	✓ ✓ ✓ ✓ ✓ ✓
3. How does the user perceive the program?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
4. Is navigation simple and transparent?	✓ ✓ ✓ ✓ ✓ ✓ ✓
5. Does the application give the user sufficient feedback?	✓ ✓ ✓ ✓ ✓
6. Do user control and freedom match the user's background?	✓ ✓ ✓ ✓ ✓ ✓
7. How easily can the user recover from mistakes?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
8. Is the screen design appropriate?	✓ ✓ ✓ ✓ ✓ ✓ ✓
9. Overall, how usable is this program?	✓ ✓ ✓ ✓ ✓ ✓ ✓

General

1. Is the interface intuitive?
Simple controls contrast clearly with background montages. Basic control functions are straightforward and easily understood through labels and simple experimentation.

2. How understandable is the application?
This EDA kiosk is part of a county system that networks kiosks at different locations. It provides access to information about a wide array of businesses, agencies and community events. The program offers considerable depth: search functions, a map service, data entry via on screen keyboard, direct connection via phone to a live information operator and more. This kiosk includes a built-in scanner and a card reader.

3. How does the user perceive the program?
Potential users could miss the opportunity to explore the extensive services and functions of this system if they misperceive the purpose of the EDA kiosk primarily as a vehicle for commercials. The system runs an attract loop consisting of 20-second spots for various businesses and agencies. Each advertising page includes a message (not always highly visible) at the bottom inviting the user to touch the screen. Thus, casual passersby that might only see one or two advertisements could perceive the kiosk as merely a directory of commercial establishments and each advertisement as merely an entry to more information about a particular establishment. Displays on the outside of the kiosk housing offer nothing to contradict such an impression.

The only apparent way to access the system's main page is to touch (express interest) in full-screen display featuring a specific enterprise, such as March Air Force Base or

the County Film Board. Many potential users are unlikely to do this if they have no interest in the particular advertisement displayed at the moment. Once the user taps the screen, the system presents more information about the particular establishment (this path verified for only three ads). If users notice the control panel to the left of this entry and if they press the appropriate button in the lower right corner (least viewed corner for most readers of Western languages), then the system presents a short video clip featuring a local official. This could be bypassed or run to completion. In either case, the next step is the home page for the EDA kiosk, the end of a fairly long path for users who want quick access to EDA's information services.

4. **Is navigation simple and transparent?**
    Yes, Buttons are large, minimizing problems for people with motor control difficulties. EDA's touch screen is very responsive with good touch resolution. There was little problem accessing 12-point hypertext links on pass-through web pages. Main page options lead to four major sub-menu pages, where choices are displayed as a series of large buttons with a brushed metallic finish. Many buttons are duplicated across these four pages and two of the four pages appear almost identical in layout and content, which provides consistency.

5. **Does the application give the user sufficient feedback?**
    Feedback from navigational controls is subtle but clear. However, some non-operable portions of the screen, such as headers and text boxes, blink when touched, as if accepting a command.

    Some pages lack appropriate "confirmatory" headers, i.e., information that explicitly confirms a user's selection. Certain search and menu selections generated subsets of information on pages that lack confirmatory sub-headers. This makes it difficult for users to remember what is being displayed, should they be momentarily distracted.
    A simple search function via an on screen keyboard apparently searches both the EDA database and selected World Wide Web websites. This feature is probably only useful for very targeted searches for information such as the name of a specific agency or enterprise, not for general searches. Entering a very general term, like "club," resulted in several pages of metallic buttons. Many of these were simply labeled "club" but led to different pages in the same website. The search function provides no advice on how to narrow a search.

Another search-type function coordinates lists of cities within a map of Riverside County regions. Users are expected to touch areas of a county map at the bottom of the page after reading lists displayed at the top of the page under large numerals that look like buttons. These numerals and the names of some cities blink briefly when touched. While this may lead some users to perceive as them as control functions they are inoperable. Only the map provides access.

Examples of other minor bugs or design problems includes:

♦ Some data entry forms hide part of the entry if it exceeds more than fifty characters.

♦ At this time, FAQ's are not populated with questions.

♦ Some content entered by the user as part of an on-line survey later appeared as part of another, publicly accessible screen.

♦ The location of the Help button occasionally switched from upper right to upper left, but the video window for help remained in the right.

♦ The phone for this kiosk was not connected. However, another nearby kiosk had a fully operable phone, which immediately connected to a live operator.

6. Do user control and freedom match the user's background?

Yes, the user could set the system for English or Spanish. A help button activates a small talking-head video in one corner of the screen. It provides directions, often quite specific to the active function or page. The audio for this and a few other features was set very low, with no apparent options for adjustment. This might make the help function unavailable to hearing impaired persons or users in noisy environments. No text-based help is available. Glare from ceiling lights resulting from the angled CRT screen is significant.

7. How easily can the user recover from mistakes?

Using the "back" button function could easily reverse many typical mistakes.

Under some circumstances, it is possible to get trapped in an endless loop when backing out of the search function, requiring the user to go to the main page. On at least one other page, scroll-up buttons disappeared, even though they were needed to reach additional pages of content.

8. Is the screen design appropriate?

Yes, the system presents attractive screens with background montages. Text fonts sometimes appear jagged. Text sometimes crowds margins of text boxes and text layout for some agency/enterprise listings are a bit choppy. One motif, frequently used in many pages as a background, incorporates palm fronds carved in low relief on a stone-like texture. This variegated pattern reduces text legibility, particularly in the calendar section.

The system provides options for printing screen content. A map button provides maps and driving directions from the kiosk location to selected organizations and locations featured in the kiosk. The system generates this map automatically, using a

Yahoo on-line map service. Although keyed to the destination address, printouts of maps and directions omit the name of the organization.

9. What is the overall usability?

Good. Kiosk design is very functional with the exceptions of the access problems imposed by the advertising and certain specialized features such as the video help. The system has a professional look and feel. Many, if not most, usability problems could probably be addressed with minimal redesign. The search function problems probably need to be addressed at a deeper level than a simple rework.

c) Technology Replication

Riverside EDA Kiosk Technology Rating

Feature	**-** **Rating** **+** 1 2 3 4 5 6 7 8 9 10
Capability	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Maintainability	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Scalability	✓ ✓ ✓ ✓ ✓ ✓ ✓
Cost	✓ ✓ ✓ ✓ ✓
Complexity	✓ ✓ ✓ ✓ ✓ ✓ ✓
Architecture	✓ ✓ ✓ ✓ ✓ ✓ ✓
Development Environment	✓ ✓ ✓ ✓ ✓ ✓ ✓
Performance	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Overall Technology Rating	✓ ✓ ✓ ✓ ✓ ✓ ✓

Capability
♦ From the available information, which includes log reports and usage information, the Riverside System has met the development requirements to facilitate a local One-Stop system.
♦ No additional resources appear to be needed.
♦ Average uptime of the thirty-six systems in the field is about 93% 7 days a week 24 hours a day.

Maintainability
♦ No specific maintenance fees, either monthly or annually, were identified. Kiosk hardware is tested monthly and the software is managed on the server side daily.
♦ One-Stop staff maintains the kiosk and the contracted vendor maintains the software.
♦ Training in or knowledge of MS Access would be appropriate for staff providing maintenance.
♦ No third-party automated tools were used to maintain the application.

♦ Some remote maintenance is possible. Kiosks are monitored to ensure the application is running and the printer is on-line. All software could be maintained off-site and uploaded while hardware maintenance must be done on-site.
♦ An outside vendor maintains the application, reviews changes and is responsible for making uploads to the kiosks. If the One-Stop staff determines that the hardware has failed, outside service would likely be required.
♦ Version upgrades are handled as part of regular maintenance by the vendor.
♦ The vendor downloads the latest application code remotely, via the Internet.
♦ Any upgrades/enhancements to the application are automatically included. Routine maintenance on each unit is done on-site on a monthly basis.

Scalability
♦ It appears from the information provided that the system is scaleable, assuming funding is provided to do so.
♦ The application has no basic limits. Rather, it is only limited by the number of kiosks in the field.
♦ According to the survey data, the database limits are based on limits of the capacity of the hard disk in each individual kiosk.
♦ According to the survey response, many SDAs are implementing kiosks, but it was their opinion that the system was not easily replicated based on its size. Yet, as with other pilots, the design of this system should lend itself to replication on an expanded basis as much of the initial design could be carried over to other systems with minimal changes. Site/language specific changes may be the only major changes required.
♦ As it is an Internet based system, TCP/IP communications are used.
♦ The kiosks are ADA compliant. The system has been designed for persons in wheelchairs, with low literacy levels and other Limited English speaking persons. Additional assistance technology is being considered.

Cost to Implement
♦ Kiosk Engine (KE) and WinNT licenses are required for each kiosk.
♦ No per user licenses are required to operate the system.
♦ Special equipment on each kiosk system includes: scanners, telephones, thermal printers, and uninterrupted power supplies (UPS), "Keep-Alive" power switches and router units for all frame relay units.
♦ As each unit is setup with a frame relay circuit, part of the overall costs include router equipment and an annual service provider agreement for a TelCom vendor to support and maintain the frame relay line.
♦ As the system is touch screen-based and includes on-line and often context-sensitive help, user-training requirements would be very low.
♦ Staff training requirements on the maintenance of the kiosk units should include training on hardware and software features.
♦ It is unclear how much testing was involved in the initial rollout of the system, but through the network, the systems (kiosks) are tested on a continuous basis.
♦ No COTS software was used in the development of the system.

♦ Approximately forty hours were spent in data conversion on a community resource database.
♦ The entire application was a custom project.
♦ New staff was hired for this project, which included 2 sales people and 3 technical staff.

Complexity
♦ The third-party products required to operate the system are as follows: Internet Explorer 4.0, WinNT, MS Word and a custom application specially designed for kiosk operation called "Kiosk Engine."
♦ Three products were integrated: System, Telpar Printers and UMAX Scanners.
♦ The middleware required are WinNT and PERL script.
♦ There are no interfaces with Legacy systems/databases, which reduces the complexity of the system.
♦ There are no special skills required to operate the general system. Some skills are required to input information and images.
♦ Data storage is not required for each user.
♦ There is no central database as each kiosk holds its own data.

Architecture
♦ The hardware implemented in each kiosk includes a MICRON PC-based Win 95/98 Workstation with a 20 inch touch screen monitor, Telpar thermal printer, surge/UPS, Walker Phone set, card reader with smart card capabilities, internal 56K modem, network card and scanner.
♦ Implemented kiosk software includes Internet Explorer 4.0, WinNT, MS Word and a custom application specially designed for kiosk operation called "Kiosk Engine".
♦ A standard connection, where possible, puts the kiosk into the Riverside County CORNET network. When a connection is not available, TCP/IP over frame-relay communications via either a dedicated or dial-on-demand link is required.
♦ The county system provides a secure firewall.
♦ There is e-mail capability.

Development
♦ Development of the system involved the use of WinNT, MS Access and the "Kiosk Engine". Development and ownership of the software are by "High Technology Solutions".
♦ The survey estimates that 98% of the application is custom developed.
♦ The same version of the software is used throughout the Riverside network. It is likely that some site-specific changes would need to be made if porting this application to another area.
♦ IEEE LAN standards were reportedly used in the implementation, but no supporting evidence was provided.
♦ ANSI802-1985 Standards for cabling, etc. and ANSI x3.135 database query methods were reportedly used, but no supporting evidence was provided.
♦ Y2K compliance was reportedly achieved, but no supporting evidence was provided.

Performance
♦ Touch screen response is within two seconds.
♦ Approximately 2.5GB of disk space are used, on average, by the systems, which usually have about 7GB total space for both system and application software and data.
♦ RAM requirements: 64mb minimum, 128MB recommended.
♦ Operating System: Windows NT4.0; Database: MS Access Runtime; Browser: Internet Explorer.
♦ The MS Access relational database was used.
♦ The system accesses data from other systems using a customized application, which compares county data with kiosk data.

d) Evaluation & Recommendations

Lessons Learned
Project Preparation
♦ Minimize scope of project to include only relevant areas such as One-Stop instead of economic development. Riverside expanded the project to include tourism and other areas. This delayed the overall project.
♦ A large organization could lose focus if they have disparate focus, which occurs when trying to please multiple parties.
♦ Develop a more realistic schedule for installing kiosks in government agencies. There were several delays in the implementation schedule for installing kiosks, such as waiting for agreements to be signed and equipment and phone line installation.
♦ Analyze the time lines thoroughly, weighing the number of departments involved in the pre-installation work. To ensure the focus of the information on kiosk is covered, evaluate the variables and the time it takes to gather the content.
♦ When working with a multitude of departments within a government entity, it is difficult to determine exact time lines. The project should have a specific chain of command for input and that chain of command needs to be aware of the benchmarks of the contract.
Procurement
♦ Ensure that all partners have reviewed the contract, line by line, so that there are no surprises. Ensure that what the vendor has verbalized is actually in the contract and would be part of the overall project.
Kiosk
♦ Kiosks need to be hard-wired to network via cable modems, DSL or other LAN based technologies. Do not expect reliable Internet connectivity from commercial ISPs. Use very flexible software because additional requirements always crop up. This was good for the software because vendors could write their own C++ code.
♦ The information to be included on the kiosk should be streamlined. After installations are complete, expand into other areas. Too much information in too many categories could not only slow the entire process, but diminishes the quality of information provided.
♦ Kiosk locations: Select locations wisely. Work with a site manager who would allow the kiosk to be very visible in their facility. Some facilities would want to locate the kiosk out-of-the-way and in a corner where visibility is poor.

Best Practices
Project Preparation
♦ Strong project management control. Deadlines must be strictly thought out and kept to a minimum.
♦ Develop a relationship with the contact at the kiosk location so that they would "watch out" for the kiosk to make sure it is not vandalized.
♦ Determine what the initial focus of the kiosk would be initially, make plans for growth and determine what additional kiosk information or areas would enhance the kiosk project in the future.
♦ Be prepared to follow-up on outstanding content from partners and other agencies placing their information on the kiosk. Ensure that these entities fully understand the format needed and the urgency. Make a specific schedule with the vendor for updating content after kiosks are in the field.
Procurement
♦ Select a vendor that understands the agency's business process.
Kiosk
♦ Kiosk project: Make a commitment to the project. Ensure that there is enough staff to handle the job. Initially, there should be an adequate amount of staff for coordination of locations, installations and gathering the initial content to be placed on the kiosk.
Partnership
♦ Try to establish excellent relationships with other agencies, departments and facilities that would be part of the kiosk project. Ensure communication lines are open, especially when installing the kiosk units.
Technology
♦ Use websites/Internet to collect centralized data and kiosk software to provide additional functionality and services such as fax, print and card reader.

Observations and Comments
Project Preparation
♦ During the process of considering this access solution, it was determined that a website would not work, because not everyone has a computer to connect to the Internet.
♦ The Riverside kiosk was design for multiple reasons including advertising, economic development and access to public in rural places.
Kiosk
♦ This sophisticated solution provided more than just access to information and services to rural areas. It is a marketing tool and is designed to bring income into the areas and provide economic development.
♦ Riverside County is a rural area where the cities are spread out over the county. Since these cities are in remote locations, access to physical One-Stop services may be miles away. Therefore, the kiosk is a great solution to provide One-Stop services to clients in these remote areas.
♦ In addition, the kiosk solution works well in large retail areas like malls and shopping centers.

Technology
♦ From the information provided, it appears that as long as the existing architecture is used, the system could be replicated with a reasonable amount of re-engineering required to adjust the site or language specific portions of the system. The touch screen software may be platform dependent, but other screens could likely be found for different platforms. MS Access runs only on PC platforms, so no Macs or other systems could be used in the kiosks.
♦ As opposed to a website, Riverside wanted a local database, faster access to information and more control over data and what people could access.

Recommendations
♦ This pilot is recommended for local replication. Riverside EDA Kiosk is fully operational. Thirty-six kiosks have been installed throughout Riverside County. There are four installations planned, with a request for at least two more. This kiosk is the most sophisticated and advanced of the three pilots. It has many functions and features such as scanning, faxing, telephone access, Internet access, etc. Riverside also sells advertising on the kiosk.
♦ There are a few usability issues that need to be modified and changed to make the kiosk usable, which are the following:
  ♦ Some non-operable portions of the screen, such as headers and text boxes, blink when touched, as if accepting a command.
  ♦ Some pages lack appropriate "confirmatory" headers, i.e., information that explicitly confirms a user's selection.
  ♦ There was little problem accessing 12-point hypertext links on pass-through web pages.
  ♦ Some data entry forms hide part of the entry if it exceeds more than fifty characters.
  ♦ At this time, Frequently Asked Questions (FAQ) are not populated with questions.
  ♦ Some content entered by the user as part of an on-line survey later appeared as part of another, publicly accessible screen.
  ♦ The location of the Help button occasionally switched from upper right to upper left, but the video window for help remained in the right.
  ♦ Under some circumstances, it is possible to get trapped in an endless loop when backing out of the search function, requiring the user to go to the main page. On at least one other page, scroll-up buttons disappeared, even though they were needed to reach additional pages of content.
  ♦ One motif, frequently used in many pages as a background, incorporates palm fronds carved in low relief on a stone-like texture. This variegated pattern reduces text legibility, particularly in the calendar section.

Next Steps
- ♦ Review the usability issues and make the appropriate changes.
- ♦ Conduct a needs analysis for the local areas in which this kiosk model would be replicated. The analysis should consider the existing database, architecture. This would serve as the blueprint for developing and implementing the kiosk in other locations.
- ♦ Document the Riverside kiosk development processes and include the lessons learned and best practices stated above.
- ♦ Incorporate local customization into the development phase.
- ♦ Develop the conversion plan to move the existing database to one of the more common relational databases and network architecture.
- ♦ Develop training for systems administrator and staff.
- ♦ Decide whether the local areas would maintain the kiosk capability or contract out for these services.
- ♦ Conduct a site-survey on location where the kiosk would be installed.
- ♦ Make sure all agreements and MOU's are in place with the site the kiosk is being installed.
- ♦ Once a final solution is set, review and document software, hardware, client-server and network equipment requirements.
- ♦ Make sure the staff is properly trained how to maintain the kiosk.

Appendix C 6

Long Beach WIN Kiosk

(6) Long Beach WIN Kiosk

a) Pilot Description

Purpose / Business Need

The proposed technology pilot components are designed to enhance the overall effectiveness of the local workforce development system by ensuring consistent access to information by both partners and customers through increased capacity and system-wide connectivity. The project would modify existing systems, build interfaces to make systems communicate and would provide connectivity to all partners, inside and outside of the Career Transition Center (CTC). The project would also provide universal accessibility to persons with special needs.

Solutions

To meet their objectives, Long Beach WIN developed business and technical solutions. The table below summarizes the solutions considered and the technology planned for implementing these solutions.

Purpose / Business Need	Solutions Considered	Technology Planned
The Career Transition Center of Long Beach needs an efficient way to inform residents about education and career training that could enhance their employment opportunities.	Web-based application. Four-station kiosk for increased usability and multiple users. Internet vs Kiosk	Must be on a secure, name-brand operating system that supports multiple databases, provides Internet connectivity and browser functionality along with browser control at a domain level. It provides full screen video, if necessary, allow for rich multimedia/images and have a web-enabled monitoring tool. Content must be remotely updateable to include kiosk's software.

Approach

Minor modifications to existing systems would enhance the electronic sharing of information and coordination of services. These would also bring systems to a level that is consistent with the elements described in the One-Stop Common Intake and Case Management Report, September 1997.

Through this grant, intake of common information would be entered once. Self-screening for potential program eligibility would be available to all customers. Once completed, customers

would be able to gather information on all available resources and print requested information. The information entered would be downloaded from the kiosk network to the intake/case management system, where local partner agencies would begin services from the newly created shared customer file. Partners would have access to the system whether located in the Career Transition Center or centered from a home office or campus.

Long Beach planned to accomplish the following:
♦ Modify the "ClientTrack" system to use the local partnership's adopted common intake forms and pre-application questions.
♦ Modify the "ClientTrack" system to open its existing One-Stop case management "buttons" for use system-wide.
♦ Interface the "ClientTrack" system with the information kiosk network.
♦ Provide CTC Local Area Network access to partners for ClientTrack use.
♦ Add PC resource equipment to CTC Resource Center to increase overall access and ensure access to special needs populations.

b) Support of One-Stop Philosophy

Critical Success Factors
Evaluation Period 11/15/99 to 1/30/00
One measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solutions implemented match with the critical success factors (CSF). The following table summarizes the degree to which the pilot project solutions aligned with the critical success factors. Columns A through G represent critical success factors defined in Section A of this report which could be answered with a yes or no. There are other factors H to J that could not be summarized in the table due the descriptive nature of the response required. Detailed descriptions of each CSF are addressed following the table

Pilot	System Implemented	Partner Connectivity			Client Accessibility		Maintainability of Technology	
		A	B	C	D	E	F	G
Intake/Case Management/System – Wide connectivity	Not implemented, changing vendors.	N	N	N	N	N	N	N
Additional and Special Needs Equipment	Hardware has been installed in ten locations.	NA	Y	Y	F	Y	Y	Y

Not Applicable

A. Did the partners get connected?

Yes, the partners got connected with the new equipment. The partners did not get connected to the ClientTracking software.

B. Was the equipment and software installed?

Yes, kiosk equipment and software have been installed for approximately one year. There are three additional units yet to be installed. The equipment for special needs was installed to provide access for persons with special needs.

C. What is the level of operability?

Yes, some kiosks are on a dial-up connection, which is somewhat unreliable. The kiosks are fully functional.

D. Did the identified clients have increased accessibility to information and services?

Yes, because the kiosks are installed in locations where target populations would frequent them the most. A system of eleven touch screen kiosks was created to provide convenient information on available vocational and skills training courses which could lead to improved employment opportunities. Access to Internet job search websites, telephone connections to service providers and a magnetic card strip reader add even more value. Kiosks were placed in local libraries, shopping malls, HUD offices, community colleges and other public places convenient to likely candidates. The target populations for kiosks are the economically disadvantaged, people eager to better themselves through training, those seeking adult education information, job seekers and people on public assistance.

E. Did additional clients or staff get increased accessibility to information and services as a result of the pilot?

Yes, a result of the pilot project, additional clients had increased accessibility to information and services. The technology was brought to those that were most in need.

F. Will this solution be viable as it is today?

Yes, this solutions is viable as it is today

G. Is it robust enough to allow for expansion?

Yes, us this solution is robust enough for expansion

H. What did or did not happen as planned and why?

Staff at sites where kiosks were to be installed was not aware that the installations were to take place. In some cases, electrical and phone lines were not installed.

I. What is the overhead to maintain it?

During implementation, one full-time employee is needed to lead the project. After installation, one employee is needed to monitor the network.

J. What worked best or what to avoid for future use?

Avoid dial-up modems and always have direct connections.

Usability

WIN appears to be mostly a "pass through" service at this time, emphasizing access to Internet services. The implementation is professional in appearance. WIN users might benefit from the kiosk's keyboard entry capabilities and phone access depending on how the kiosks are managed, but it is not clear whether these features have been fully implemented. Casual visits to websites via WIN did not yield any site in which WIN permitted use of the on-screen keyboard to fill in forms.

Most WIN usability problems could be addressed with minimal redesign. The kiosk employs visual themes related to the ocean and coast, as well as specific visual elements that represent the Long Beach community. These would obviously need to be reworked and made more generic if the system was to be used in other communities.

The physical housing of the WIN kiosk deserves further investigation as seating and viewing arrangements seem particularly well designed for all users, including wheel chair-bound persons.

Long Beach *WIN* Kiosk

Question	- Rating + 1 2 3 4 5 6 7 8 9 10
1. Is the interface intuitive?	✓ ✓ ✓ ✓ ✓ ✓ ✓
2. How understandable is the application?	✓ ✓ ✓ ✓ ✓ ✓
3. How does the user perceive the program?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
4. Is navigation simple and transparent?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
5. Does the application give the user sufficient feedback?	✓ ✓ ✓ ✓ ✓
6. Do user control and freedom match the user's background?	✓ ✓ ✓ ✓ ✓ ✓
7. How easily can the user recover from mistakes?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
8. Is the screen design appropriate?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
9. Overall usability?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

General

1. **Is the interface intuitive?**
   Yes, simple controls contrast clearly with background montages. Basic control functions are straightforward and easily understood through labels and simple experimentation.

2. **How understandable is the application?**
   WIN starts with an attract loop showing scenes of Long Beach, but the loop does make the purpose of the kiosk service obvious. Yet, the main program is easily accessed and is clear in its purpose.

3. **How does the user perceive the program?**

   The version evaluated is designed to accommodate standing users well as access by wheelchair-bound users. This four-station kiosk includes provisions for standing and seated users and a small shelf for note taking. It offers excellent wheelchair access. Low-glare, high-resolution LCD screens, set at right angles to floor, eliminate reflection from ceiling fixtures, making displays very easy to read.

4. **Is navigation simple and transparent?**

   Yes, the system employs a simple "back" button to let users retrace travel, but jumps a level or two and this might be confusing or tedious. Some users might confuse back buttons used for paging through the local WIN kiosk with a separate back button for paging through the Web. Some pages lack appropriate "confirmatory" headers, i.e., information that explicitly confirms the user's selection.

5. **Does the application give the user sufficient feedback?**

   While, feedback from navigational controls is subtle but clear, there were some minor problems. Some non-operable portions of the screen such as headers and text boxes blink when touched, as if accepting a command. WIN provides no status updates regarding requests to access the Internet. During long delays, the only clue that WIN is active is a small hourglass cursor.

   Some screens invite the user to activate the kiosk's built-in phone through a screen display. When using the kiosk phone, the user could not respond to the phone's voice menu because neither the screen nor the surrounding kiosk includes a telephone keypad.

6. **Do user control and freedom match the user's background?**

   Yes, buttons are large, minimizing problems for people with motor control difficulties. The touch screen is very responsive with good touch resolution. Most users would experience minimal problems accessing 12-point hypertext links on the Web. The on screen keyboard is easily operated but not well advertised. It is somewhat difficult to use with World Wide Web fill-in forms. No help is available for this function. The program includes no help functions and no options for languages other than English.

7. **How easily can the user recover from mistakes?**

   Using the "back" button function could easily reverse many typical mistakes. Software errors, including a system freeze, surfaced when backing out of websites or on pages that WIN apparently ruled "off limits". Some screen controls in some situations activated only after persistent tapping.

8. **Is the screen design appropriate?**

   Yes, WIN employs attractive screens with background montages that included subtle animation effects. Text fonts are sometimes jagged and text often crowds the margin

of text boxes. Pages loaded from the Internet take a long time; even when linking to a page previously accessed in the same session.

9. What is the overall usability?
Good. Kiosk design is very functional. Overall look and feel are contemporary without being obtrusive. Many, if not most, usability problems could probably be addressed with minimal redesign.

c) Technology Replication

Long Beach WIN Kiosk Technology Rating

Feature	Rating
	- **+** 1 2 3 4 5 6 7 8 9 10
Capability	✓ ✓ ✓ ✓ ✓ ✓
Maintainability	✓ ✓ ✓ ✓ ✓ ✓
Scalability	✓ ✓ ✓ ✓ ✓ ✓
Cost	✓ ✓ ✓ ✓ ✓ ✓ ✓
Complexity	✓ ✓ ✓ ✓ ✓ ✓ ✓
Architecture	✓ ✓ ✓ ✓ ✓ ✓ ✓
Development Environment	✓ ✓ ✓ ✓ ✓ ✓ ✓
Performance	✓ ✓ ✓ ✓ ✓ ✓
Overall Technology Rating	✓ ✓ ✓ ✓ ✓ ✓ ✓

Capability
♦ Long Beach developed a kiosk capability. It has Intranet capability that could not go outside a predetermined set of locations.

Maintainability
♦ The One-Stop IT staff maintain the kiosks. There is no additional training needed for the software. They use MS BackOffice to maintain the kiosk.
♦ If any additional upgrades were to occur, they would be to include additional functionality.

Scalability
♦ Each kiosk has its own database built in and the system allows for only one user at-a-time per kiosk.
♦ The database is expandable. It has a local database, one per machine and the system was built for one user at a time

Cost to Implement
♦ The system uses the City's IBM web server and existing Network infrastructure. Each PC would require a Windows NT license, Access database license and the touch screen software license from Touch Media.

♦ The software requires PCs with Windows Operating System, using the minimum 64K of memory.
♦ One-Stop IT Staff support the kiosk. The technical staff would have to be familiar with Windows operating system and the Access database. There was no data to convert. There was 100% customization of the screens that display at the kiosk.

Complexity
♦ Nine kiosks were built. They were integrated using NetWare 4.1 and Windows NT using the City's existing networks and web server. Each system has an HTML and Visual Basic touch screen customized for the kiosk. The skills required to maintain the system are persons with knowledge of PCs using the Windows operating system, Netware and Access database.

Architecture
♦ PC based Architecture.
♦ Operating System: Windows NT 4.0.
♦ Database: Access.
♦ Each kiosk has it's own Access database. There is a central Access database that stores a copy of all the individual kiosk databases.
♦ Middleware: NetWare 4.1 and Win NT. The Windows NT server is routed using Ethernet through the existing network server.
♦ They used an existing T-1 Network Architecture using TCP/IP.
♦ The city's existing IBM Enterprise web server runs on a UNIX system. They would be purchasing a Netscape Enterprise Server with the grant money.
♦ There is a firewall.
♦ It has e-mail capability.
♦ The Internet portion of the software uses 128k encryption.
♦ The kiosk would access an internal website.
♦ The software was written using HTML and Visual Basic.

Development
♦ The off-the-shelf products used were Netware, Windows NT and Access.
♦ Customization to the Access database was done, but would not be needed for other sites.
♦ It is unknown whether IEEE or ANSI standards were used to develop the system.
♦ The system is Y2K compliant.

Performance
♦ The system responds to informational queries in less than 10 seconds.
♦ 560KB of disk space are required on the server and 600KB on the application.
♦ 64k of memory are required to operate the kiosk.
♦ The system uses an Access database.

d) Evaluation & Recommendations

Lessons Learned

Procurement

♦ Check the vendor's references and visit sites where they have installed their product. Long Beach visited the vendor locations where the kiosks were in production; to observe how the kiosk actually worked and functioned.

♦ In the contract process, remain in control and free of the umbrella of the vendor. Some One-Stops signed two-year contracts with case management vendors and they are obligated in an agreement longer than desired.

♦ The vendor should have an understanding of how One-Stop works. There would be changes in such a dynamic environment.

Kiosk

♦ Once the kiosks were installed at the different sites, the site managers wanted to move the kiosk to a more highly visible areas for public access. However, where they wanted to put the kiosk did not have the telephone lines and electricity.

Best Practices

Project Preparation

♦ Utilize strong project management controls and stick to the time line.

♦ Make sure the project operators are prepared for the project and installation.

♦ Have a technology plan.

Procurement

♦ When procuring a technology product, check the vendor's track record with other customers. Some One-Stop product vendors do not have an established track record.

♦ Make sure the vendor has undertaken projects that are the same size as the one for which they are procured.

♦ IT staff should review these solutions early in the procurement process and have the opportunity to ask key questions. Most of the key questions are technical in nature such as:

   ♦ What does the maintenance agreement cover, how much technical assistance in available?

   ♦ What kind of technical documentation is available?

   ♦ What is the performance of the network?

   ♦ What relational database does the application run in? How complexed is the conversion to another database?

   ♦ How is the license priced per user, enterprise, or location?

   ♦ Can data be migrated into the application from other data sources?

♦ Make sure to give vendors as much notice as possible regarding changes in the deliverables. Be diligent in making sure vendors answer questions.

♦ Procure a company that understands how to get people to the next step.

Staffing
♦ IT staff should be on the procurement team to evaluate whether all the solutions would work and if the costs are reasonable.
♦ Train the staff on how to use the technology.
Methodology & Procedure
♦ Conduct focus groups with employers and clients to find out what they want from the project and to get their feedback on the technology being developed. Also, their input during the design phase regarding functions and features is especially important.
Technology
♦ Stress the importance of having all sites secured and connectivity installed.

Observations and Comments
Project Preparation
♦ Long Beach PIC had an overall technology plan of how they wanted to automate their One-Stop Careers.
Staffing
♦ Al Dave, the Systems Administrator, did a re-engineering project on how to automate and train the staff going to a paperless system and bringing people up on technology.
♦ The One-Stop staff put a great deal of thought into the potential uses of the kiosk.
Methodology & Procedure
♦ Long Beach used Schedule It and then migrated to Microsoft Project as their project management tools.
♦ The Long Beach staff did observe some standards and methodology, such as the California Electronic One-Stop Reports on Common Intake, Case Management and Servicing People with Special Needs.
Partnership
♦ Since the PIC is a part of the city, this project had the support of the city and city services were tied into the kiosk, such as paying utility bills.
Kiosk
♦ Originally, Long Beach PIC saw the kiosk being a virtual case manager. They planned to interface the case management software with the kiosk so a client would register for One-Stop services. The client could have access to core services through the kiosk. The case management software would track the client's activities. The kiosk would provide more accessibility to services in the city without requiring people come to the Career Center.
♦ They envisioned the kiosk growing with the technology and the automated case management system. Services could be expanded to provide easy access.
♦ When people lose their jobs, the next thing they lose are their utilities such as gas and electricity, water and power, telephone service, etc. The Long Beach One-Stop staff saw the kiosk as a valuable resource for clients in this situation. The kiosk was designed with a telephone so clients in need could call the utility and telephone companies and get their services turned on or extended.
♦ The kiosk offers excellent wheel chair access. Low-glare, high-resolution LCD screens, set at right angles to floor, eliminate reflection from ceiling fixtures, making displays very easy to read.

Technology
♦ The system appears to be portable as long as a network infrastructure is put in place and the existing architecture is used.
♦ Long Beach controls the client's Internet access. They also control how clients could get out to the Internet by limiting search capabilities that are not employment and training related. IT staff figured out all the ways people could get out to the Internet to control access.
♦ Though Long Beach was not able to interface the Common Intake/Case Management System with the kiosk, this project was still successful. A key to its success is the technical staff that has stayed involved with the project ensuring that key milestones were met. Also, the staff has been learning and enhancing their skills as they worked on the project. Therefore, value was added to the staff's development.

Recommendations
♦ Kiosks need to be hard wired to the network via cable modems, DSL or other LAN based technologies. Do not expect reliable Internet connectivity from commercial ISPs. Use very flexible software because additional requirements always crop up. This was good for the software because vendors could write their own C++ code.
♦ This project is recommended for local replication. Their fourplex kiosk is an excellent model of kiosks designed for people with special needs. Long Beach WIN Kiosk is fully operational in ten locations in Long Beach. It is ADA compliant, accommodating people with special needs such as wheel chair access. This kiosk has a LCD touch screen, which absorbs the glare from ceiling lights.
♦ There are a few usability issues that need to be modified and changed to make the kiosk usable. The following items would have to be corrected:
   ♦ Some users might confuse back buttons used for paging through the local WIN kiosk with a separate back button for paging through the Web.
   ♦ Some pages lack appropriate "confirmatory" headers, i.e., information that explicitly confirms the user's selection.
   ♦ Headers and text boxes blink when touched, as if accepting a command.
   ♦ WIN provides no status updates regarding requests to access the Internet during long delays. The only clue WIN is active is a small hourglass cursor.
   ♦ The on screen keyboard is easily operated but not well advertised.
   ♦ It is somewhat difficult to use with World Wide Web fill-in forms. No help is available for this function.
   ♦ The program includes no help functions and no options for languages other than English.
   ♦ Software errors, including a system freeze, surfaced when backing out of websites on pages that WIN apparently ruled "off limits".

Next Steps
♦ Review the usability issues and make the appropriate changes.
♦ Conduct a needs analysis for the local areas in which this kiosk model would be replicated. The analysis would consider the existing database, architecture and connectivity. This would serve as the blueprint for implementing the WIN kiosk in other locations.
♦ Document the Long Beach development processes and include the lessons learned and best practices stated above.
♦ Make allowances for local customization to the kiosk to be incorporated into the development phase.
♦ Develop the conversion plan to move the existing database to one of the more common relational databases and network architecture, if necessary.
♦ Training for systems administrator and staff would need to be developed.
♦ A decision would have to be made whether to maintain the kiosk capability internally or hire a vendor.
♦ Conduct a site-survey on the location where the kiosk would be installed.
♦ Make sure all agreements and MOU's are in place with the site where the kiosk is being installed.
♦ Make sure the staff is properly trained on how to maintain the kiosk.
♦ Once the final solution is decided upon, review and document software, hardware, client-server and network equipment requirements.
♦ Integrate the common intake/case management (CICM) system with the kiosk, when the CICM software is operable.

Appendix C 7

Los Angeles Virtual Net/Case Management

(7) Los Angeles Virtual Net/Case Management

a) Pilot Description

Purpose / Business Need

The purpose of the technology component of the LA Virtual One-Stop Project is to link all regional, self-identified One-Stop centers, the JTPA & EDD partners, non-co-located EDD sites DPSS-CalWORKS offices and partners' primary locations, so that they could:
♦ Share information about clients and programs.
♦ Communicate through virtual conferencing.
♦ Communicate through e-mail.
♦ Provide electronic registration for services.
♦ Share provider information, social services information, labor market data and job leads with job developers and case managers through common intake and case management.
♦ Reduce staff time and customer confusion resulting from paper referral.

Scope of the project – The current Frame Relay Network (FRN) links all eight Private Industry Councils within Los Angeles County, encompassing JTPA Titles II & III and the self-identified One-Stops they administer. It does not, however, currently link the JTPA & EDD staff co-located at these One-Stops. The LA Virtual One-Stop Proposal seeks funding to fully link co-located EDD staff, appropriate non-co-located EDD sites and other mandatory partners; Seniors, Veterans and most importantly, Department of Public Social Services (DPSS)-CalWORKS.

Solutions

To meet their objectives, LA Virtual Net developed business and technical solutions. The table below summarizes the solutions considered and the technology planned for implementing these solutions.

Purpose / Business Need	Solutions Considered	Technology Planned
Bridge client's mainframe systems.	Private point to point to network. Allowing all participating agencies to access the system via the Internet. Private Frame Relay network which links all of the major participants.	Expand region-wide Frame Relay Network using the existing TI circuit Backbone and install middleware to connect DPSS mainframe to the system.
Provide a common intake platform for case management.	Point to Point Network, Private lease line option, Internet option and Frame Relay Network.	Expand region-wide Frame Relay Network.
Provide a host system for the case management software package that performs ad hoc reporting for all partnering agencies.	ClientTrack, POSSE/TEAMS, SMARTware and Metsys.	Write a SFP for a One-Stop Common Intake Case Management System, that complies the California Electronic One-Stop CICM Guidelines
Provide county staff with training and mentoring in the design and implementation of this solution, including all software.	Develop a Social Services Provider Directory.	Provide electronic access to a comprehensive county–wide listing of providers allowing referring entities to compare prices for such services.
Assist partners in upgrading their computing systems in order to meet new case management requirements.	Conduct surveys on partner hardware and software. Identify and purchase needed software and equipment.	Purchase necessary hardware and software.

Approach

South Bay Private Industry Council (SBPIC) envisioned a region-wide frame relay network for LA County and LA City's self-identified One-Stop Centers and mandatory invitees. To fully orchestrate the connectivity envisioned in the State Plan, SBPIC expanded its existing network. This network would provide a platform for connectivity. It would allow One-Stop Centers, prime agents and required invitees the capacity to share information electronically through a common intake/case management system. It would also provide electronic access

to a comprehensive county listing of Social Services Providers in a form of a directory. SBPIC planned the following steps to accomplish their goals:

♦ SBPIC worked with the major Prime County Agencies, other participant SDA's and the SBPIC to negotiate a formal MOU.

♦ A Solicitation for Proposal (SFP) for an automated case management system was developed and released.

♦ Once the SFP for automated case management systems were submitted, applications were reviewed. An advisory board met to review analyses and recommendations for the case management software and announced the award for the automated case management software applications.

♦ The Advisory Board met to discuss policy for information sharing and confidentiality via common intake and case management.

♦ They negotiated and finalized the contract with the automated case management vendor. They provided county staff with training and mentoring in the design and implementation of this data warehouse, including all software tools.

♦ Also, SBPIC began recruiting for additional technical staff as they began reviewing required equipment configurations and obtaining updated price quotes from vendors for all hardware and software.

♦ They ordered T1 lines to connect to DPSS. They designed a master schedule for physical connection-Frame Relay Network (FRN) sites, equipment and modem sites.

♦ The master plan for physical connections included FRN sites equipment, modem sites and implementation for DPSS.

♦ Bridge for DPSS was the middleware piece that would be put in place so that different software could communicate with each other.

♦ Begin Installation of T1 line to DPSS and conduct line quality/continuity testing on T1 line. Complete installation of routers and delivery of equipment to DPSS.

♦ Assist partners in upgrading their computing systems in order to meet new case management requirements.

♦ Create lease-to-buy program for some CBO's to amortize costs over several years.

b) **Support of One-Stop Philosophy**

Critical Success Factors
Evaluation Period – 12/01/99 to 1/31/00

One measure of the pilot project's alignment with One-Stop philosophy is the degree to which the solutions implemented match with the critical success factors (CSF). The following table summarizes the degree to which the pilot project solutions aligned with the critical success factors. Columns A through G represent critical success factors defined in Summary Report section of this report which could be answered with a yes or no. There are other factors H to J that could not be summarized in the table due the descriptive nature of the response required. Detailed descriptions of each CSF are addressed following the table.

Pilot	System Implemented	Partner Connectivity			Client Accessibility		Maintainability of Technology	
		A	B	C	D	E	F	G
Social Service Provider Directory	The taxonomy is in, but the database is not loaded	In process						
ClientTrack	A training copy is operational	In process						
Frame Relay Network	System is fully Implemented	Y	Y	Y	Y	Y	Y	Y

A. Did the partners get connected?

Yes. Self-identified One-Stop sites within Los Angeles County with all mandatory One-Stop partners and "required invitees" were connected on a FRN. The case management software was installed after the evaluation was complete. DPSS had a middleware piece to bridge the DPSS Leader System (SAWS strategy) with the Legacy system that would be phased out over a two year period.

B. Was the equipment and software installed?

See above for Frame Relay Network. The case management software was installed for partners to test and train on middle to late February. Also, the Social Services Providers Directory taxonomy is complete and the database is expected to be loaded 2/3/00.

C. What is the level of operability?

ClientTrack is operable and staff is being trained on the software. The Social Services Providers Directory database would be loaded 2/3/00. The DPSS Bridge and FRN are fully operational.

D. Did the identified clients have increased accessibility to information and services?

Yes, the One-Stop staff and mandatory invitees have increased accessibility to client, employment and training information and services.

E. Did additional clients or staff get increased accessibility to information and services as a result of the pilot?

Yes, as a result of this pilot project, staff in the One-Stop Career Center System in Los Angeles County increased accessibility to information and services through the region-wide FRN and automated case management system.

F. Would this solution be viable as it is today?

Yes, FRN is the most cost efficient network solution for a project of this size.

G. Is it robust enough to allow for expansion?

Yes, the ClientTrack, FRN and the social service directory are robust enough for expansion.

H. What did or did not happen as planned and why?

Optimal linkages were not possible with EDD, because of inability to agree to terms for shared data structure. This was a problem.

I. What is the overhead to maintain it?

The overhead to maintain the FRN is minimal. Inglewood Information Services Department (ISD) handles this. However, the administrative entity is moving to the City of Hawthorne.

J. What worked best or what to avoid for future use?

There are a lot of problems with doing a regional technology project. LA has eight PICs of which six are included on this proposal. They were not starting at the same point with regards to technical infrastructure. SBPIC underestimated the staff time to bring everyone up to the same level, especially LA City and LA County One-Stop Centers. Their One-Stops have been outsourced, so they have different vendors operating their Career Centers. Putting them all on a same network was a first. This feat enhanced accessibility and provided connectivity with in the LA Region. Technology surveys were necessary to evaluate what equipment the One-Stops had, in order to identify the hardware and software to connect to the FRN. In addition, existing networks had their

own platforms and security. There were security issues with EDD. They stated that they could not share data or lines. Their vendor is based out of state, which makes it difficult to get fixes and problems handled.

Usability
Social Services Provider Directory
> **http://www.i-train.org/tax/**

This site is designed to assist users who want to search for information by exploring a hierarchical representation of information in a large database. The user could move up or down through a series of hierarchically organized pages, each presenting another level of directory headers, by simply clicking on a directory titles. These titles are color-coded to indicate levels of subordination. No other search function is available from this page.

The web page does not contain information to orient the user to the purpose of the structure of the directories, the alphanumerical directory codes or the means for navigating the database. However, almost any browser-savvy user could quickly understand how to navigate through simple experimentation and exploration. Some general orienting information is available through a logo-link to Info Line of Los Angeles. It appears that this page would eventually be linked to or subordinated to the Info Line site.

This interface taxonomy is extremely simple. Beyond this, there are no usability issues to consider because usability would depend almost entirely on the file structure and content and the understanding that users would have regarding this structure and content.

The two-page "home page" for this site takes about five seconds to download over a 28.8 standard KBS modem, which is extremely fast compared to most websites. Once the home page is in place, page downloads associated with various directories appear directly dependent on the amount of text and typically take one or two seconds.

The page displays well on any size monitor, but the two logo-links to other sites would be partially cut off on very small (640x480 pixel) monitors.

The evaluator did not test to determine whether persons using typical text-to-speech readers would be able to read the hierarchical displays, but it seems likely that they would. To be BOBBY compliant, this page would need to provide alternative text labels for the two logo-links at the top of the page. Since neither project was complete during the period of evaluation, a full usability study was not conduct on ClientTrack software or the Social Services Directory.

c) Technology Replication

LA Virtual One-Stop ClientTrack

Los Angeles Virtual Net/Case Management Technology Rating

Feature	-				Rating			+		
	1	2	3	4	5	6	7	8	9	10
Capability	✔	✔	✔	✔	✔	✔	✔			
Maintainability	✔	✔	✔	✔	✔	✔				
Scalability	✔	✔	✔	✔	✔	✔	✔			
Cost	✔	✔	✔	✔	✔					
Complexity	✔	✔	✔	✔	✔	✔				
Architecture	✔	✔	✔	✔	✔	✔	✔	✔		
Development Environment	✔	✔	✔	✔	✔					
Performance	✔	✔	✔	✔	✔	✔				
Overall Technology Rating	✔	✔	✔	✔	✔	✔				

Capability
♦ Los Angeles Virtual One-Stop consists of the ClientTrack system.
♦ The additional capacity requested in the sub-grant facilitates development of a network infrastructure that hasn't existed in LA. This infrastructure provides increased communication, connectivity and electronic linkages among One-Stops Career Center staff and mandatory partners that has never existed before.
♦ There are no uptime issues because the system is available 24/7.

Maintainability
♦ There is some required maintenance to the system.
♦ Maintenance is straightforward.
♦ Extensive training is necessary to maintain the software.
♦ Automated tools are being used to maintain the system.
♦ Remote maintenance is possible.
♦ It is necessary to have outside service performed by the vendor because there were modifications requested to develop the system.
♦ Upgrades would be made.
♦ It is unknown what is involved in doing an upgrade.

Scalability
♦ The database has a maximum number of concurrent users has not, which was not communicated to SAIC. The number of clients in the database has net met the maximum limited, since the users are training on the system.

♦ The database is fully expandable, which means the concurrent user licenses could be expanded.
♦ The database could be expanded to be more robust based on the expected volume of transactions and users expected to be on the system.
♦ The system uses TCP/IP communications.
♦ The system is accessible to persons with disabilities and special needs.

Costs to Implement
♦ An SQL license is required to operate the system.
♦ There is no per workstation or per user license agreement.
♦ The software would work on a standard PC.
♦ The minimum extend memory is 32MB. .
♦ There is extensive training needed for users and technical staff.
♦ About 60% of the project was spent on testing versus development and installation because of the extensive customizations requited by the six PIC's.
♦ COTS software and hardware were used.
♦ No data conversion was required.
♦ Extensive customization was required to meet the needs of six different PICs.
♦ New staff was hired and trained to run the system. There were nine staff hired to support the grant, 3 to 5 to support the case management system.

Complexity
♦ Other than PC hardware and Windows 95/98, no third-party products are required to operate the system.
♦ Nothing was integrated and no middleware was required.
♦ There are no interfaces to the legacy system.
♦ Extensive training is required in order to operate the case management software.
♦ Data storage is required for each user.
♦ The City of Inglewood maintains the central database.

Architecture
♦ SQL Server database.
♦ Using a PC (Dual Processor) using Windows 95/98 and NT 4.0.
♦ MPL and Java was used for the application.
♦ The DSI ClientTrack software was implemented.
♦ An Intranet over a frame relay network is required for full access to the software.
♦ A firewall is in place.
♦ The system has e-mail capability.

Development
♦ The case management software was off-the-shelf with some customization.
♦ Approximately 20% of the final product was customized.
♦ The custom development is specific to location and needs to be changed for other sites.
♦ No IEEE or ANSI standards were used.

♦ The Y2K compliance was defined by City of Inglewood standards.

Performance
♦ The system responds instantaneously.
♦ It uses 57MB of memory on a hard drive.

LA Virtual One-Stop Social Service Provider Directory (SSDPD)

Capability
♦ The additional capacity requested in the sub-grant facilitates development of the local One-Stop system, through development of the directory and the electronic infrastructure that it runs on.
♦ The evidence of the additional capacity is the technical nature of the One-Stop. For the first time every there is connectivity between the One-Stop Career Centers and their mandatory partners
♦ No additional resources are needed.
♦ The system is up all day, every day.

Maintainability
♦ Some maintenance is required.
♦ The maintenance is straightforward.
♦ Extensive training is needed for the software.
♦ Automated tools are available.
♦ Remote maintenance is possible.
♦ Outside service is required. It is necessary to have outside service performed.
♦ Upgrades are planned to be made to the directory.
♦ The next upgrade is going to be web-based. Each customer would just need to have a web browser to access the system via the Internet.

Scalability
♦ The application has a maximum limit base on the concurrent user license, which has not been met.
♦ The database is fully expandable provided the current user license is expanded.
♦ The database could be expanded to be more robust based on the expected volume of transactions and users expected to be on the system.
♦ The system uses TCP/IP communications.
♦ The system is accessible to persons with disabilities and special needs.

Cost to Implement
- ♦ A SQL license is required to operate the system.
- ♦ There are no per workstation or per user licenses required.
- ♦ The software runs on a personal computer.
- ♦ There is no requirement for extended memory.
- ♦ There is extensive training needed for users and technical staff.
- ♦ They spent about 60% of the project on testing, rest of the time was in development and implementation.
- ♦ COTS hardware and software were used.
- ♦ No data conversion was required.
- ♦ Extensive customization was required to meet the needs of the six PICS'.
- ♦ A new staff was hired and trained to run the system.

Complexity
- ♦ Other than PC hardware, and Windows 95/98, no third-party products are required to operate the system.
- ♦ No middleware is required.
- ♦ No interfaces to other systems are required.
- ♦ Extensive training is required.
- ♦ Data storage is required for each user.
- ♦ The city of Inglewood maintains the central database.

Architecture
- ♦ SQL server was implemented.
- ♦ The database is on a PC.
- ♦ The system is client/server based.
- ♦ The programming uses Active Server pages. However, it may be changed to Java.
- ♦ An Intranet over a frame relay network is required for full access to the software.
- ♦ The entire system is accessed from a web browser.
- ♦ A firewall is operational to provide security.
- ♦ It is e-mail capable.

Development
- ♦ The Social Service Provider software is completely custom.
- ♦ The directory was customized for the site, but could be easily customized for other sites.
- ♦ IEEE and ANSI standards are not used.
- ♦ It is Y2K compliant to city standards.

Performance
- ♦ The system responds to informational queries in less than 10 seconds.

d) Evaluation & Recommendations

Lessons Learned
Project Preparation
♦ Make sure the scope of work necessary to bring multiple agencies on to a common electronic infrastructure is fully understood. It is important to have a needs analysis first in order to define infrastructure requirements and the work needed to bring each site up to a minimum level necessary for connectivity.
♦ A regional collaboration with multiple agencies is complicated and takes more resources than anticipated. Additional equipment, software and hardware had to be purchased to get all the One-Stop Career Centers up the required level.

Best Practices
Project Preparation
♦ Look to expand on existing resources to provide feasible solutions.
♦ Conduct a needs analysis on hardware and software on all the agencies that would be involved in a region wide infrastructure connectivity project. The benefit of connectivity would be a homogenization of technical hardware and software of the same standard.
♦ Have a technology plan for the entire scope of the project
♦ The partners involved in the regional collaboration should share common objectives and goals.

Observations and Comments
Partnership
♦ Most One-Stop are not very technologically astute or savvy. However, the SBPIC has a unique resource at their disposal, which is City of Inglewood Information Services Department (ISD). The City of Inglewood's ISD has a great technological reputation and is quite innovative in their own right.
Technology
♦ The magnitude of the Frame Relay Network project for Los Angeles County was enormous. It is quite an accomplishment to have regional connectivity throughout all of Los Angeles County. This is a first because they did not have this capacity before the project started. SBPIC has been a leader in the Los Angeles One-Stop community in terms of innovation and regional collaborative projects.
♦ The social service directory taxonomy and file structure has been loaded. However, the database has not been populated. The Regional and Public Training Vendors directories are fully operational. The system could be used elsewhere, as long as the same platform and operating system types are used. The software would have to be customized to the specific location. It appears that this could be done fairly easily.
♦ The DSI case management program was made available for staff members to use within the past week. The current system is client server-based. This software is up and running at several different locations, meaning that it could be set up for different customers throughout the state. An upgrade to a complete web-based system is almost finished. Each customer would only need a web browser to access the system. Staff began training on the software after the evaluation was complete.

Recommendations

♦ At this time, neither project is ready for local replication. When these solutions are in complete, they should be considered for state and local replication. Their methodology and expertise is very sound. Their methodology for providing partners with connectivity throughout their One-Stop Career Centers and regional procurement process for the case management system should be documented for other locations to use.

♦ The methodology and architecture for the Regional Frame Relay Network is recommended for local replication. The FRN is robust and viable solutions for other local regional areas.

Next Steps

♦ A usability study should be conducted when the Social Services Directory and case management components are complete and make the appropriate changes.

♦ Document the process to develop and implement the FRN and incorporate lessons learned and any best practices.

♦ Conduct a needs analysis for the local areas in which this pilot would be replicated. The analysis should consider the existing database, architecture and partner connectivity. This would serve as the blueprint for implementing the FRN and case management system.

♦ Document the Virtual LA development, procurement and implementation process and incorporate the lessons learned and best practices stated above.

♦ Depending on the results of the needs analysis, a conversion plan may need to be developed to migrate to network platform (i.e. UNIX to NT) or relational databases (i.e. Access to Informix) or both Training for systems administrator and staff would need to be developed.

♦ Conduct a site-survey on locations where partner connectivity would be enhanced or created.

♦ Make sure all agreements and MOUs are in order to allow partner agencies to share client information and case loads

♦ Make sure the staff is trained to use the case management software and social service directory.